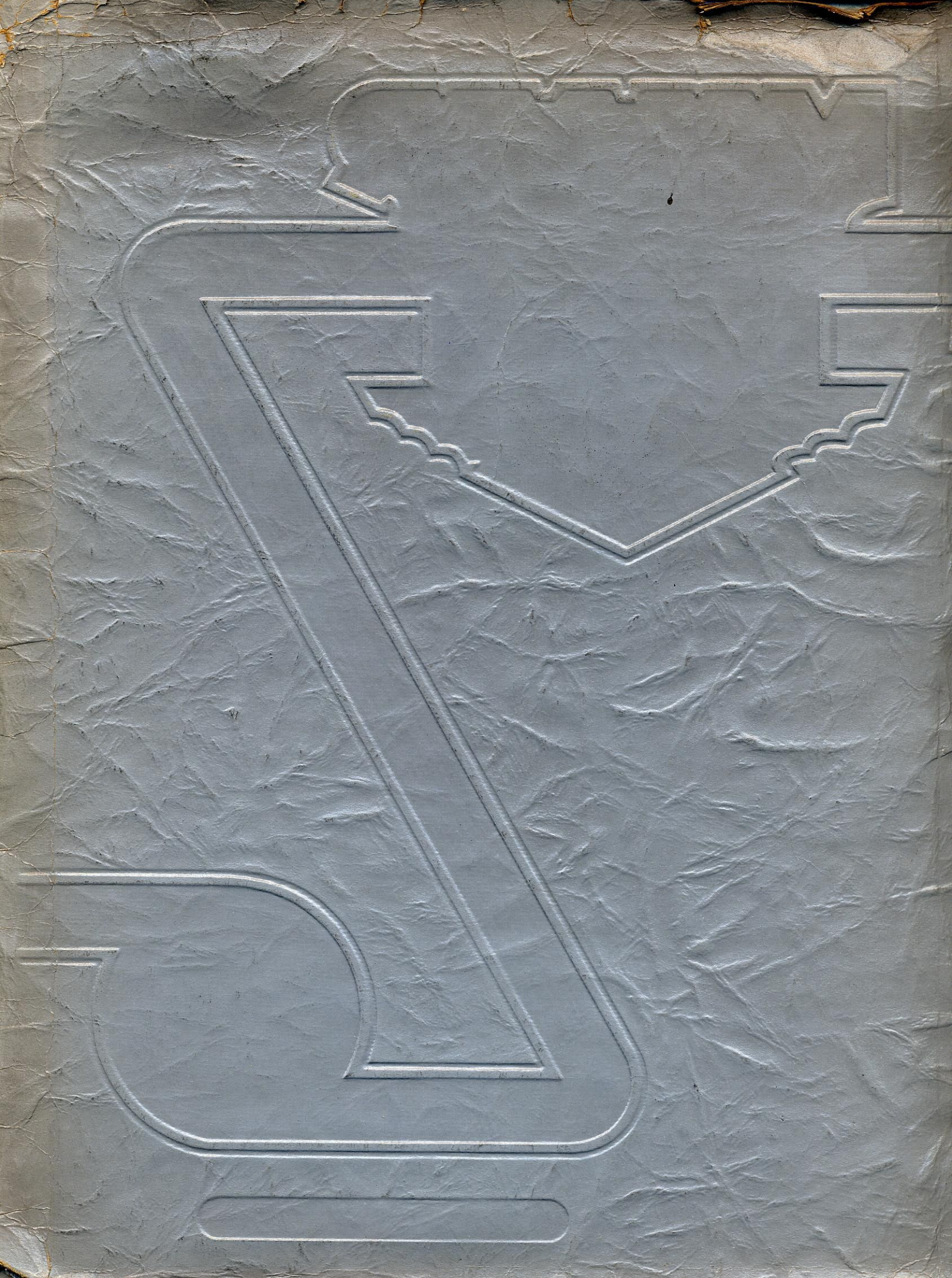
MILLER

AUTOMOTIVE SERVICE TOOLS AND EQUIPMENT

MILLER MANUFACTURING CO.
DETROIT MICHIGAN
SPECIAL SERVICE TOOLS

KAISER
FRAZER
HENRY "J"

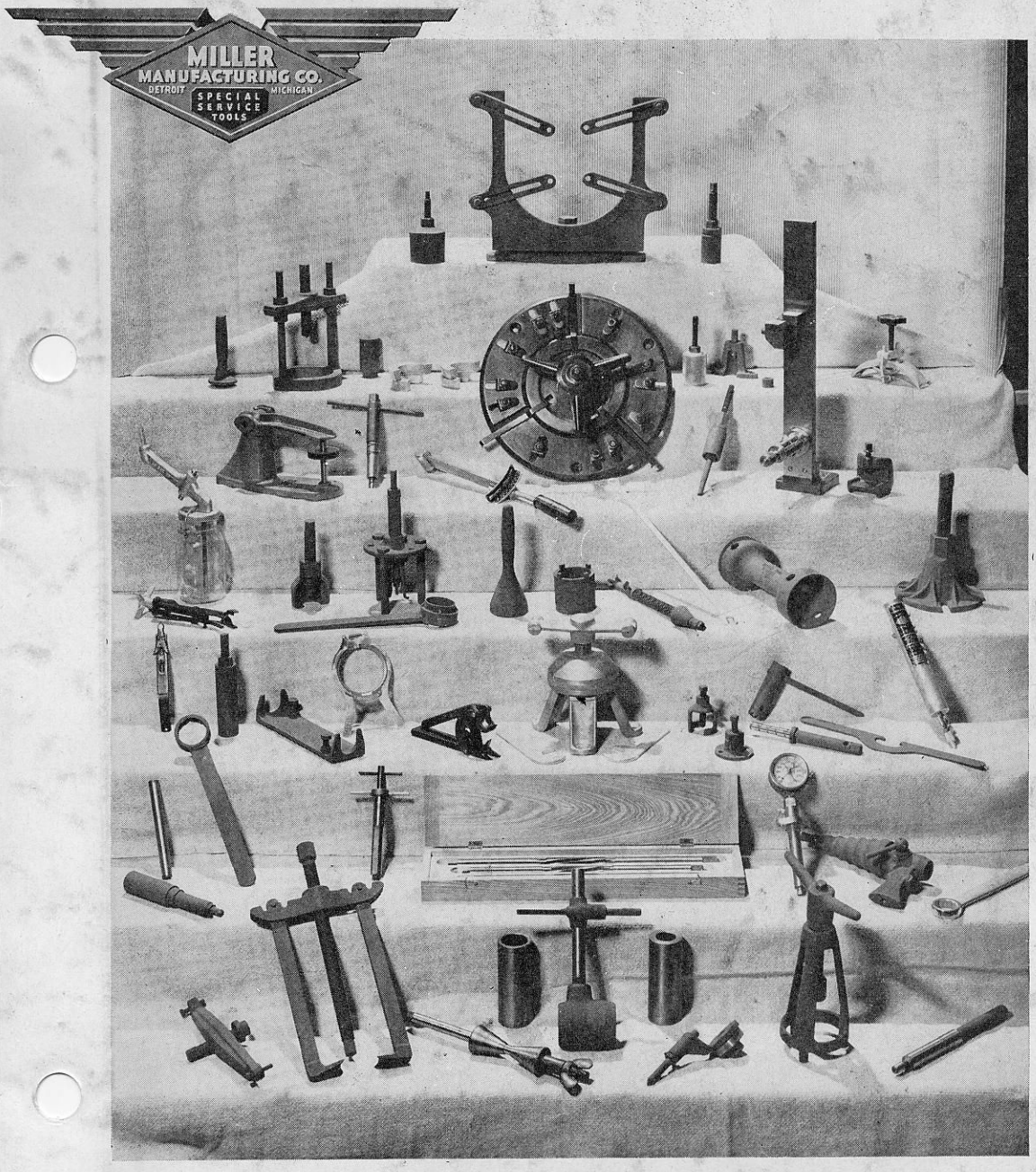
CATALOG F-619



37 Years of Service to Industry

All Tools in this Catalog are grouped according to Listings shown in Right Hand Margin Index. This grouping conforms to most Car Manufacturers Service Manual Index Listings.

Miller Special Service Tools Assure Better, Quicker, and More Accurate Service than possible with standard tools!



MILLER MANUFACTURING CO.
5919 Tireman Avenue, Detroit 4, Michigan, U. S. A.

SP—Sag 10M F-619 Sept 1951 Printed in U.S.A.

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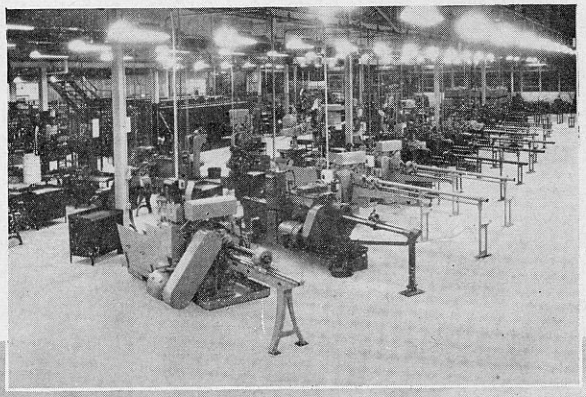
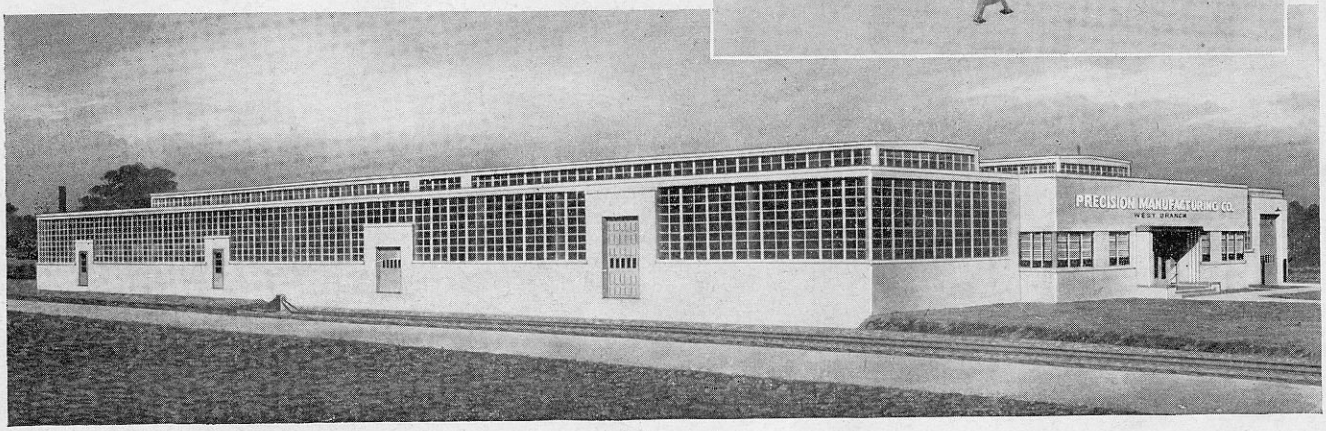
MILLER MANUFACTURING CO.
5919 Tireman Ave.
DETROIT 4, MICHIGAN

Administration Offices, Engineering, Shipping and Export Dep'ts.





PRECISION MFG. CO.
West Branch, Mich.

A Wholly Owned Miller Subsidiary

Tool and General Manufacturing

FOUR MILLER PLANTS SERVE YOUR SERVICE TOOL NEEDS!

Miller's 37 Years of world-wide recognition for dependable time and effort saving special tools for all types of automotive service is no accident. The combined facilities, resources and management talents of these sizeable plants assure Miller tool buyers of outstanding values in tool design, service and price.

Car and truck dealer, vehicle fleet operators and independent service operators today classify Miller Service Tools as essential for profitably performing every day services at fair customer prices. The tools and equipment described and illustrated in this book have all been tried and proven by qualified automotive service engineers to be necessary, practical, labor-saving tools that will increase the ease, quality and speed of servicing today's automotive vehicles.

MILLER MANUFACTURING CO. DETROIT MICHIGAN SPECIAL SERVICE TOOLS

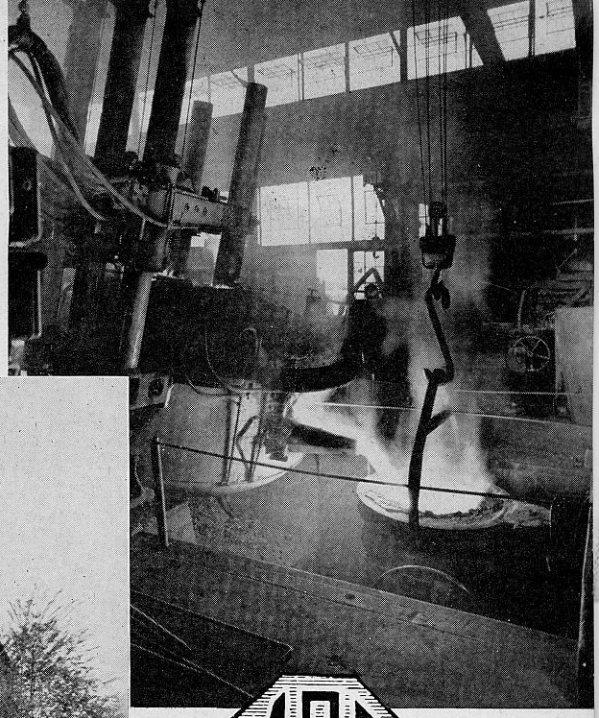
MILLER MANUFACTURING CO.
Detroit 4, Michigan, U. S. A.

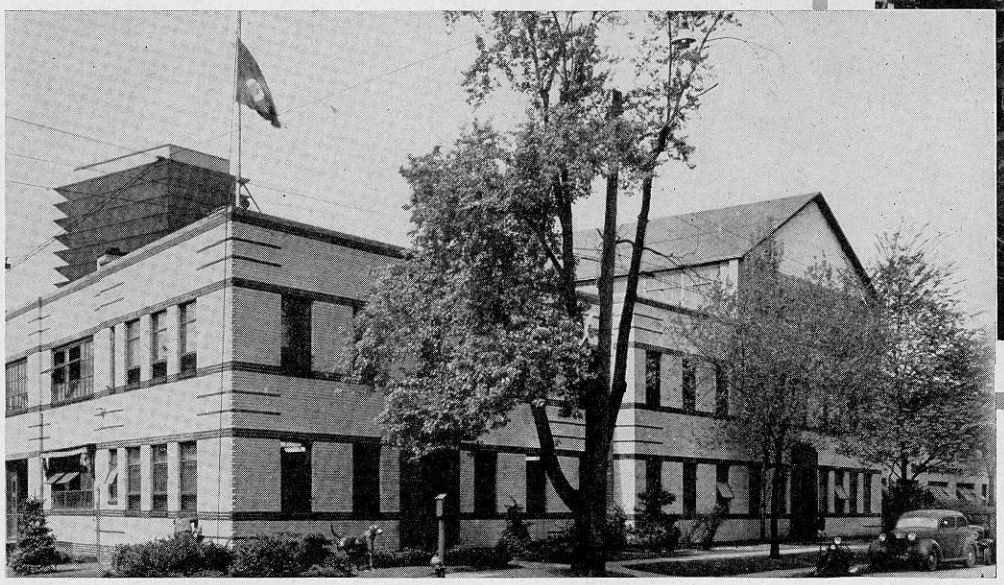
MONROE STEEL CASTINGS COMPANY

Monroe, Michigan, U. S. A.

A WHOLLY-OWNED MILLER SUBSIDIARY

This long established company has devoted a major part of its production to steel castings for the automotive industry. In addition to castings for Miller Special Tools, Truck and Bus rear axle housings, large truck and trailer spring hangers, parts for winches, hoists, castings for fire engines, earth movers, bulldozers and farm tractors are regular Monroe products.





MSC

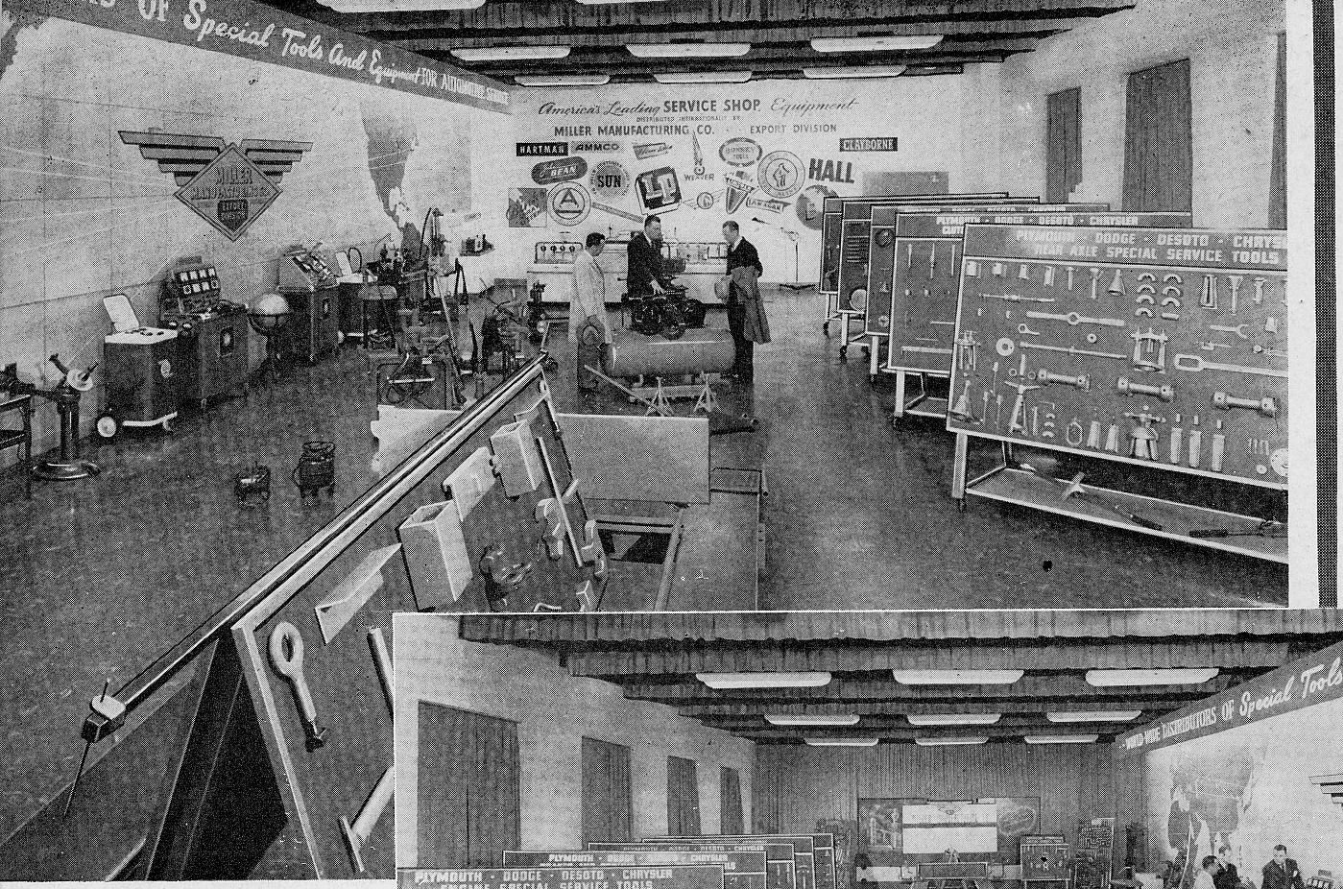
The BUCKEYE FORGING CO.

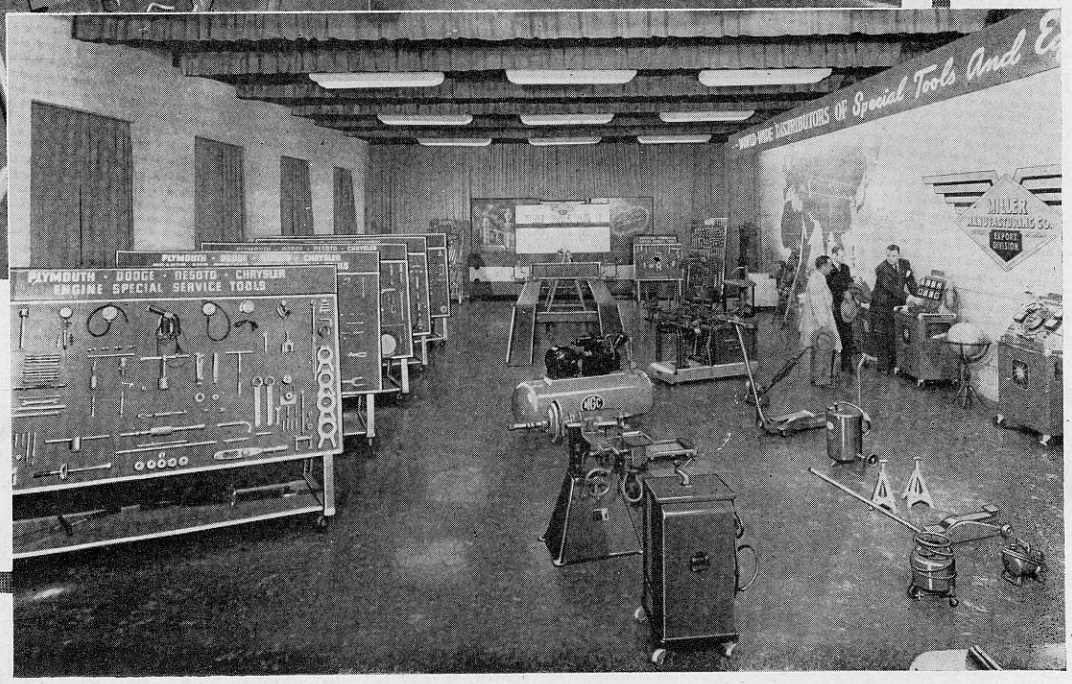
Cleveland, Ohio, U. S. A.

•

A WHOLLY-OWNED MILLER SUBSIDIARY

Established in 1918 this company produces forgings for Miller Special Tools and for many other industries. They are quantity producers for manufacturers of automotive and farm machinery, boiler and tank fittings, and metal containers for oils, chemicals and paints. Modern plant equipment includes a large assortment of forging hammers and complete die and machining departments.





You can safely purchase, with complete confidence, any item listed in this Miller Catalog and expect to find it to be exactly as represented. Behind each product sold by Miller is our valued reputation for reliability and our long association with leading manufacturers of cars and trucks.

MILLER EXHIBIT OF SERVICE TOOLS AND EQUIPMENT IS OPEN TO ALL VISITORS

You are welcome to visit our plants at any time. At our Tireman Avenue plant you will see one of the most comprehensive permanent displays of Special Automotive Service Tools and Equipment available in one location. Hundreds of automotive distributors and dealers from countries throughout the world and every section of the United States have seen this outstanding exhibit.

On display here, in one large exhibition room, for the first time in automotive history, is a complete and comprehensive collection of more than 700 special service tool and equipment units.

Here, in one location, you can inspect and purchase practically every type of tool or unit of shop equipment that is required for a modern Service Department.

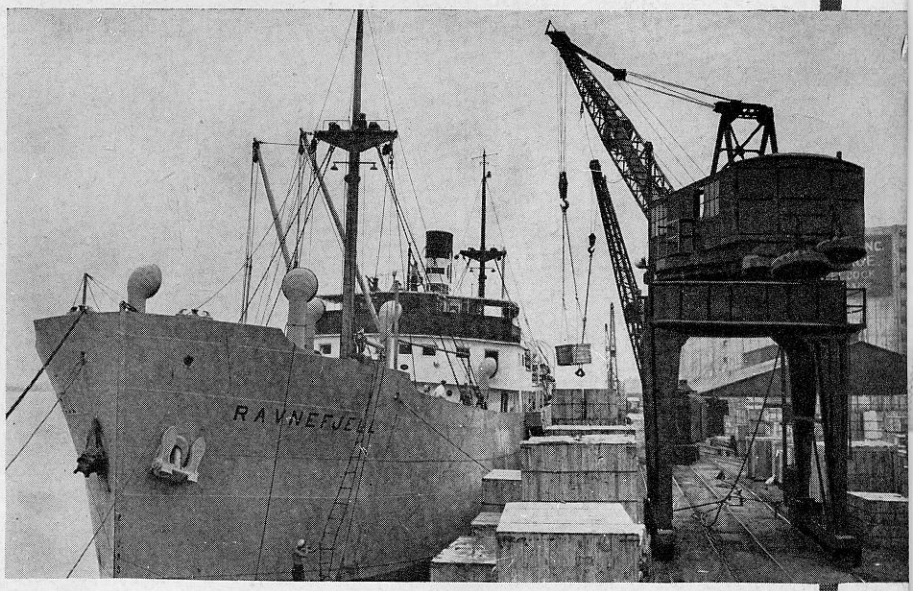
This display is for the convenience of owners and operators of service organizations throughout the world. Open during all business hours, we invite you to visit it whenever convenient.

MILLER MANUFACTURING CO. DETROIT MICHIGAN SPECIAL SERVICE TOOLS

MILLER MANUFACTURING CO.
5919 Tireman Avenue
DETROIT 4, MICHIGAN, U. S. A.

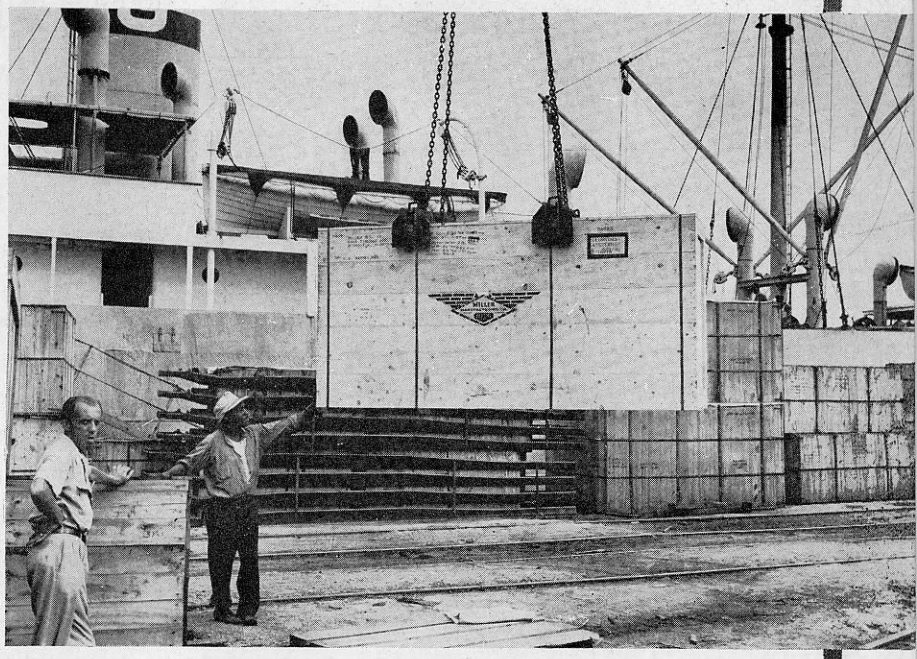
MILLER EXPORT DIVISION MAKES ALL SERVICE TOOLS AND EQUIPMENT AVAILABLE FROM ONE RESPONSIBLE COMPANY

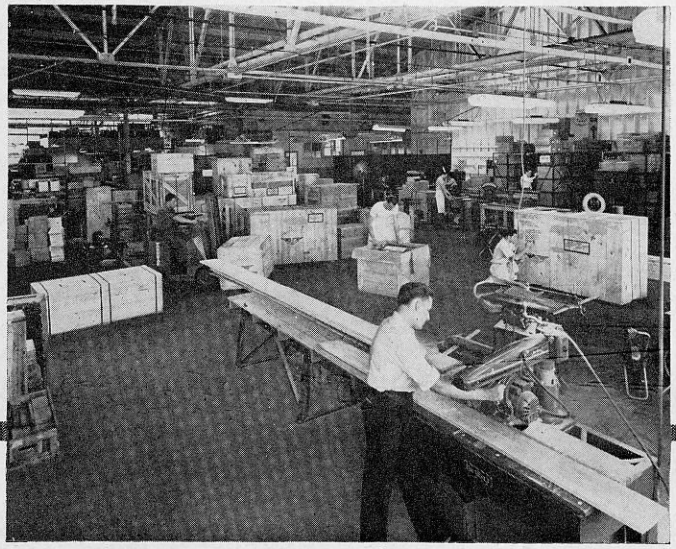
Miller operates an experienced and entirely separate Export Division, supplying complete service station equipment to overseas car and truck distributors and dealers through one source. You will find it easy and economical to consolidate and purchase your tool and equipment needs through our organization which is staffed with export-trained personnel thoroughly familiar with all necessary overseas documentation procedures and shipping requirements.



U. S. A. PRICES F. O. B. DETROIT

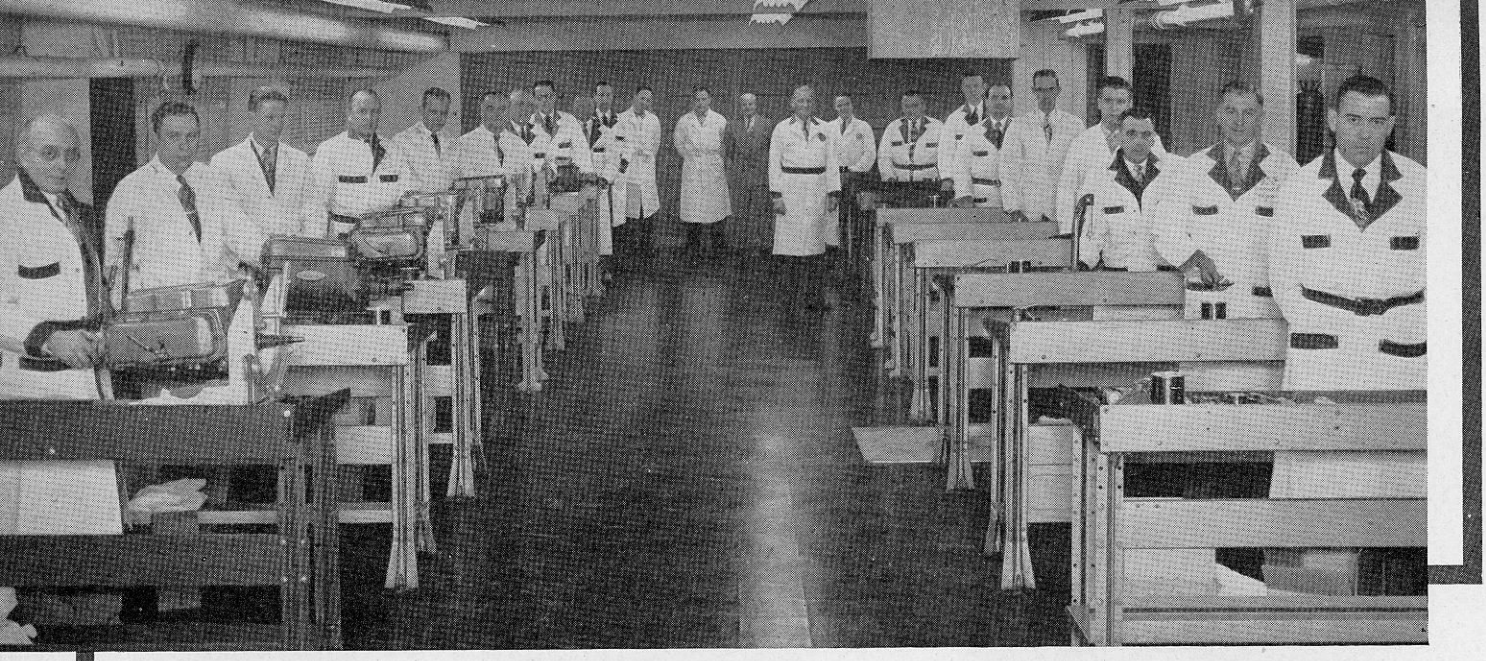
Manufacturer's U. S. published prices are rigidly maintained on an F.O.B. Detroit basis. All Miller customers are assured the same basic U. S. price. Insurance, boxing, inland and ocean freight, and other miscellaneous expenses are charged at current rate prevailing at time of shipment. Shipments are made against cash or irrevocable letters of credit confirmed by any U. S. bank.



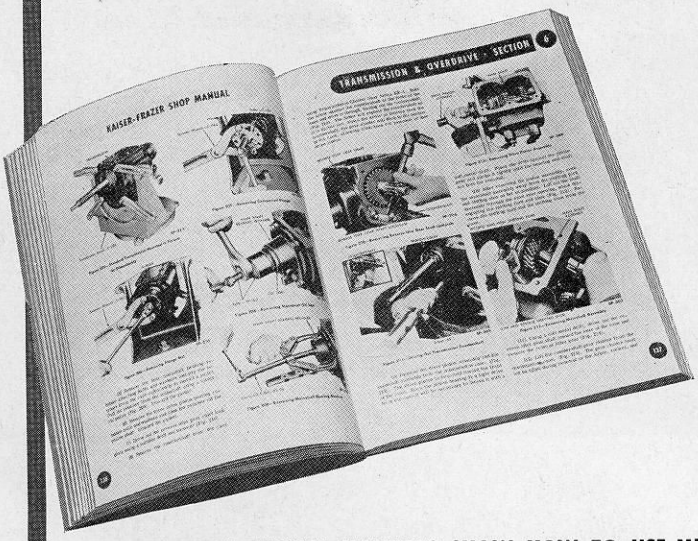


COMPLETE BOXING AND EXPORT SHIPPING FACILITIES

This is a small section of our Export Shipping Dept. where overseas orders receive careful, experienced packing complying with all export regulations.



MILLER SPECIAL SERVICE TOOLS ARE USED AT THE AUTOMOBILE FACTORY TO ESTABLISH TIME SAVING SERVICE STANDARDS . . .



Miller Special Service Tools will, therefore, help you establish and maintain efficient, time-saving service standards in your shop. They make it possible to assure better service at lower costs.

Miller tools are developed in direct cooperation with factory engineers to perform specific service operations in accordance with factory recommendations.

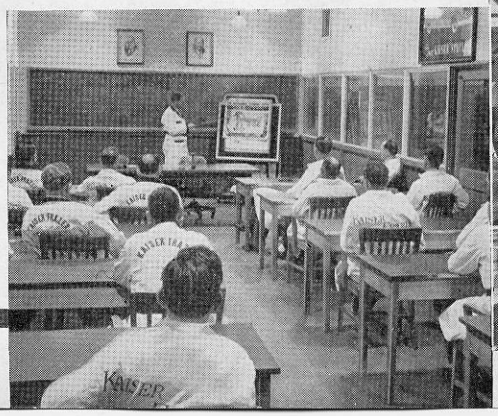
You buy Miller special tools direct from the manufacturer (or through your car factory service or sales representatives)—at one net price F.O.B. Detroit. There is no costly sales force to maintain—no resale discounts or commissions to be paid—so you save money when you buy Miller tools.

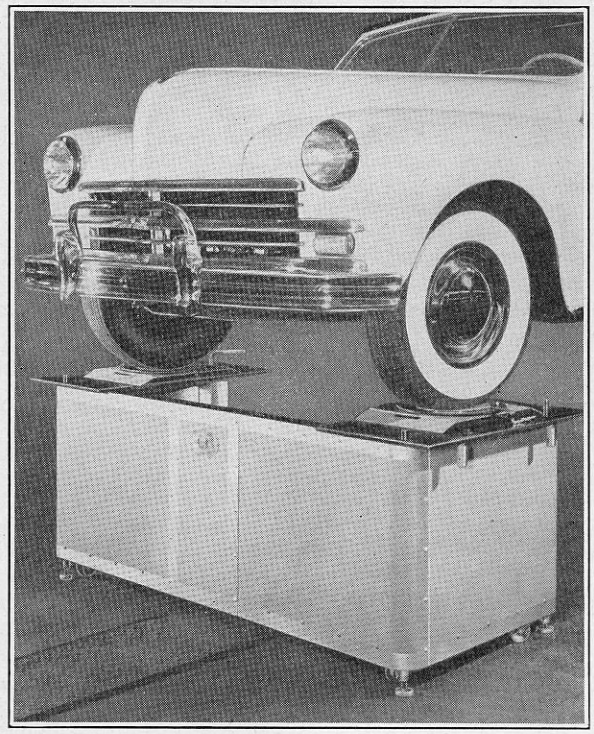
FACTORY SERVICE MANUALS SHOW HOW TO USE MILLER TOOLS

You'll find Miller Special Tools are profusely illustrated in official car factory service manuals. They are the recognized standard when car factories establish service time schedules and recommended service procedures.

SERVICE REPRESENTATIVES LEARN HOW TO USE SPECIAL TOOLS

When your car factory service representative is schooled on the new models, he learns about the new Miller tools that save time and do the job faster and easier. Ask him to help you select the tools needed in your shop.



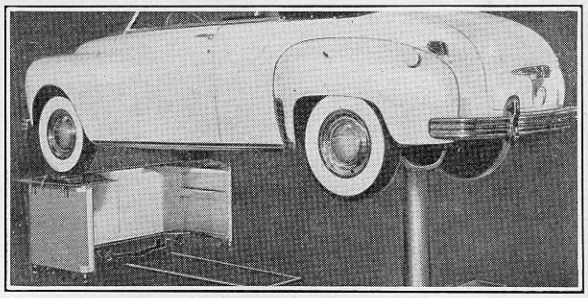


PORTABLE WHEEL ALIGNMENT TABLE

Saves Floor Space — Can Be Used With All Types of Twin Post Hoists

MT-289 Alignment Table Less Gauges

Table 78" long, 34" wide and 32" high. It is fitted with 4 large free rolling casters and 4 combination leveling and floor lock pads. Net weight approx. 455 lbs., shipping weight approx. 600 lbs.



USE WITH YOUR PRESENT PORTABLE WHEEL ALIGNMENT GAUGES

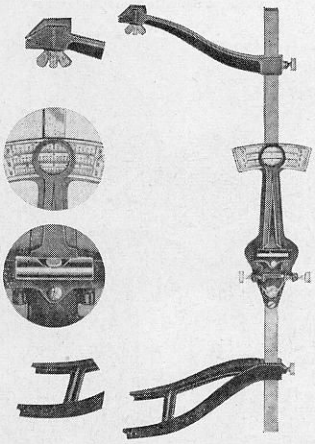
You need buy no special gauges to work with this portable alignment table. Your regular portable gauges such as listed below will allow you to offer complete wheel alignment checking service. Table saves space, yet provides effective and convincing merchandising of front-end inspection and alignment service to your customers.

Can Be Used For Front-End Inspection, Checking and Correction Work

This practical, space-saving portable table can convert **each** of your twin post hoists into an extra profit producing front-end service department. Ideal for large metropolitan dealers with limited floor space or small dealers who cannot afford to install large specialized front end racks.

Gauge and Turntables Work Well With the MT-289 Alignment Table.

DD-428
Universal Camber, Caster and King Pin Inclination Gauge



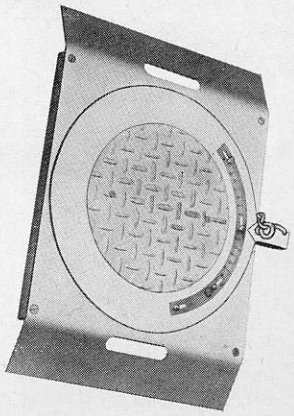
The patented self-subtracting feature of this gauge makes it easy and safe to use. It is adjustable for all size of cars and trucks, yet lightweight and extremely accurate.

DD-398
Wee-Gee Board Wheel Aligner

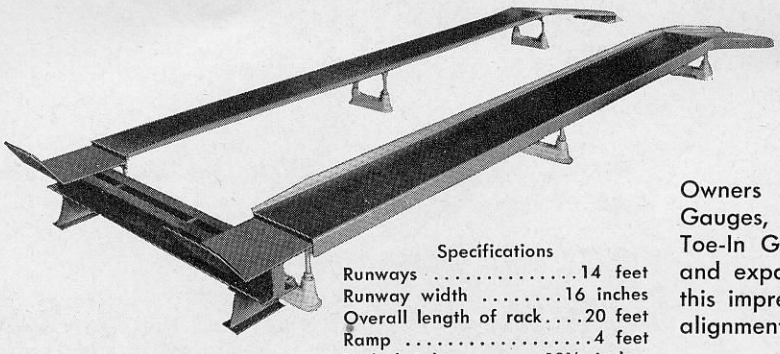
See Page 9 For Additional Details on These Gauges.

It is easy to check toe-in and toe-out with this Wee-Gee Board. Its pivoted action shows actual scuffing action of tires as they roll over road. Used with car on any smooth, level floor or rack.

DD-435
Full Floating Turntables (Sold in Pairs)



You'll find these turntables heavy enough to hold in position on the floor or table while the full floating contact plate accurately floats to position. Each unit fitted with large, adjustable, easy to read degree scale and locking pin.



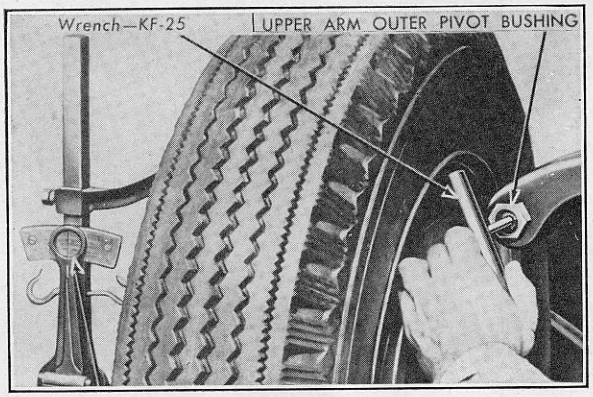
Specifications

Runways .....14 feet
Runway width .....16 inches
Overall length of rack....20 feet
Ramp .....4 feet
Rack height.....13½ inches

WHEEL ALIGNMENT RACK

CA-17 For Use With Portable Wheel Alignment Gauges shown on next page.

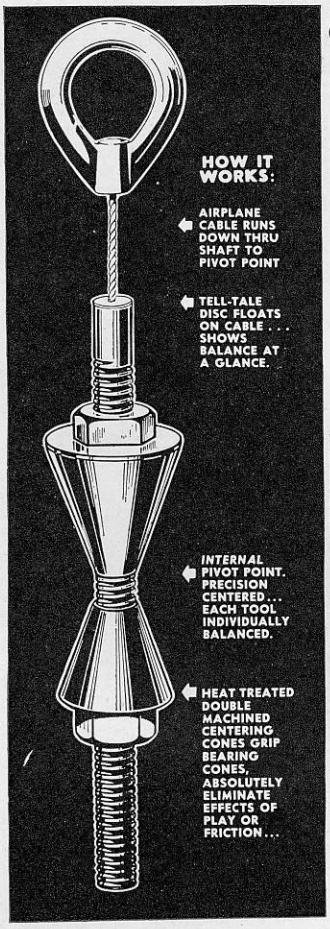
Owners of DD-428 Universal Camber, Caster and K.P.I. Gauges, DD-435 Turning Radius Checking Turntables and Toe-In Gauges including Wee Gee Boards, can modernize and expand their present wheel alignment department with this impressive rack and thus provide a complete front end alignment service.



CAMBER ADJUSTING WRENCH

KF-25 For all 1947, '48, '49, '50, and 1951 Kaiser and Frazer cars.

Save valuable skilled labor by equipping your shop with several of these inexpensive wrenches. They make camber adjustments easy and fast. Their prompt availability avoids needless waste of a skilled mechanic's time that may be lost looking for some make-shift tool.


HOW IT WORKS:
AIRPLANE CABLE RUNS DOWN THRU SHAFT TO PIVOT POINT
TELL-TALE DISC FLOATS ON CABLE . . . SHOWS BALANCE AT A GLANCE.
INTERNAL PIVOT POINT. PRECISION CENTERED . . . EACH TOOL INDIVIDUALLY BALANCED.
HEAT TREATED DOUBLE MACHINED CENTERING CONES GRIP BEARING CONES, ABSOLUTELY ELIMINATE EFFECTS OF PLAY OR FRICTION . . .

C-735 Includes:

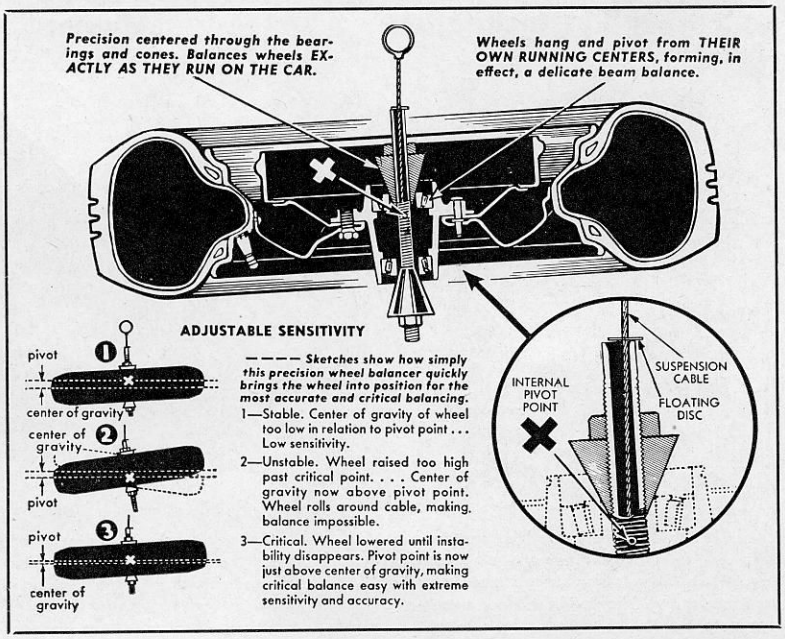
- PRECISION BALANCER
- HANGER
- DISPLAY AND MOUNTING BOARD
- ADV. SIGN 26" x 36"
- 50 ANNOUNCEMENT CARDS
- RECORD CHART

THIS IS HOW BALANCER IS HUNG ON HANGER

WHEEL BALANCER

C-735 For all Passenger Cars and Light Trucks.

Anyone can use this simple balancer — with it you can prove out-of-balance to your most skeptical and non-technical customer. It balances from the center of gravity of the entire wheel assembly just as the wheel runs on the car.

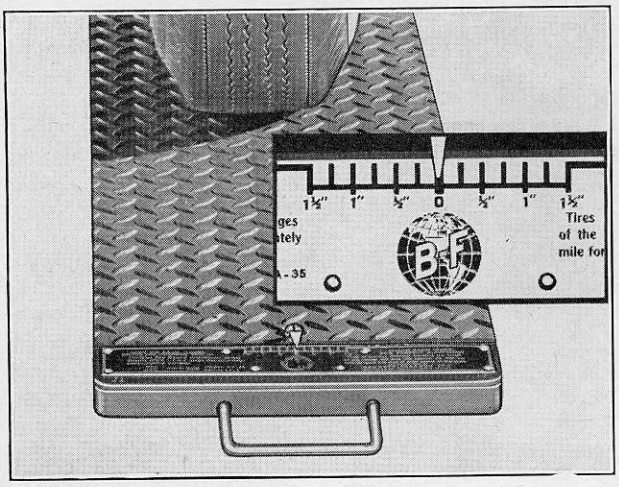

Precision centered through the bearings and cones. Balances wheels EXACTLY AS THEY RUN ON THE CAR.
Wheels hang and pivot from THEIR OWN RUNNING CENTERS, forming, in effect, a delicate beam balance.
ADJUSTABLE SENSITIVITY
pivot
center of gravity
center of gravity
pivot
pivot
center of gravity
INTERNAL PIVOT POINT
SUSPENSION CABLE
FLOATING DISC

Sketches show how simply this precision wheel balancer quickly brings the wheel into position for the most accurate and critical balancing.

1—Stable. Center of gravity of wheel too low in relation to pivot point . . . Low sensitivity.

2—Unstable. Wheel raised too high past critical point. . . . Center of gravity now above pivot point. Wheel rolls around cable, making balance impossible.

3—Critical. Wheel lowered until instability disappears. Pivot point is now just above center of gravity, making critical balance easy with extreme sensitivity and accuracy.



WEE-GEE BOARD WHEEL ALIGNER

DD-398 For all cars and light trucks. (Capacity 4500 lbs. per wheel.)

Use this portable aligner to provide your customer with positive visual proof of scuffing action of tires on the road. Checks both toe-in and toe-out, also "steering geometry" or scuffing action of tires on right or left turns. Checks each wheel separately.

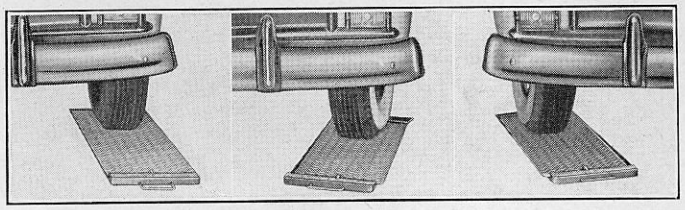
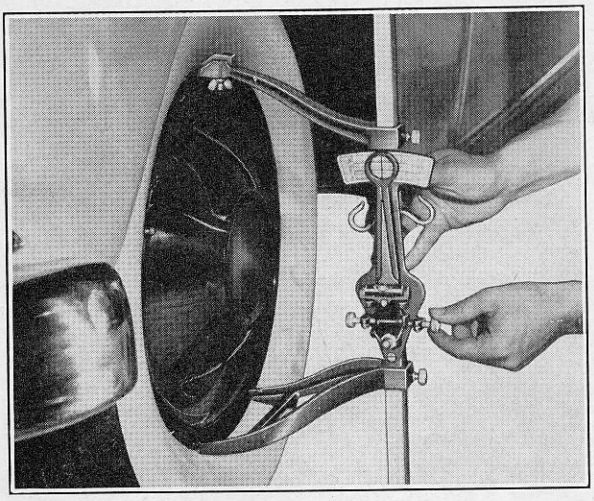


Illustration on left shows how car is pulled straight ahead with one wheel on aligner. No movement indicates correct alignment.

Center illustration shows right turn check — bent steering linkage can be detected in this test.

Illustration on right shows left turn check — all misalignment is indicated on large, easy-to-read, inch scale. (Each test indicates condition of wheel on the floor.)



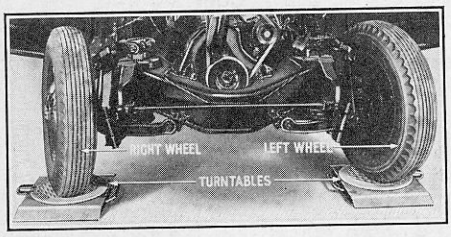
PORTABLE CAMBER, CASTER AND K.P.I. GAUGE

DD-428 For All Cars and Trucks.

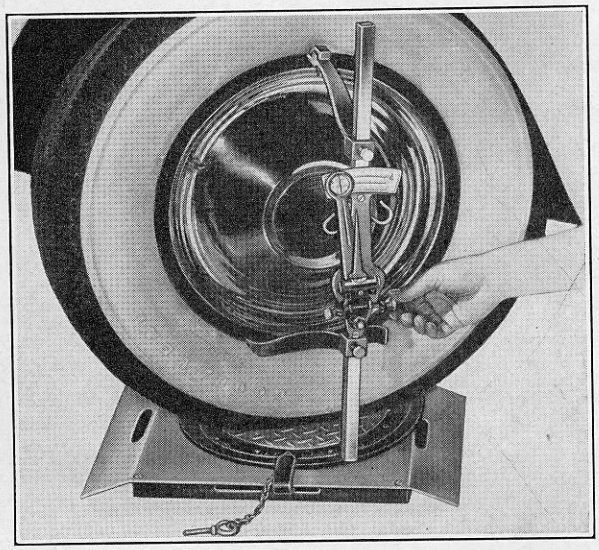
The low-cost, easy-to-use, portable gauges shown on this page will provide your shop with the minimum equipment necessary to perform accurate wheel alignment service. Functionally it compares with equipment costing many times more money.

The DD-428 Gauge has a patented self-subtracting scale that makes its use easy and foolproof. The new design legs permit a wide range of adjustments from 10" to 28" wheels. The self-lock clip on the top leg holds gauge tight to wheel without the need of chains or other inconvenient devices.

When using the DD-428 gauge with the DD-435 Turntables DEDUCT ¾° from caster reading to compensate for height of turntables. Full operating instructions supplied with each gauge.



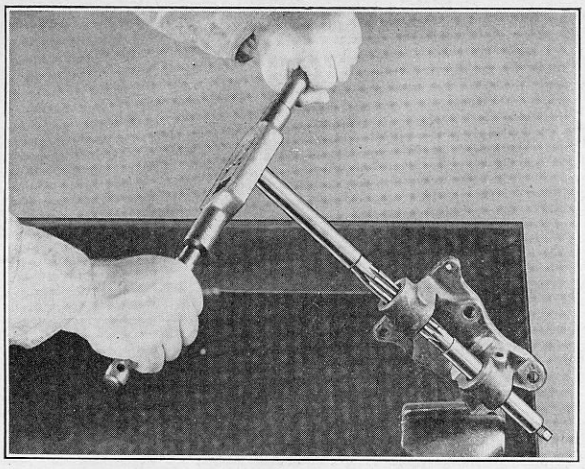
Turntables are used in Pairs — one under each front wheel



FULL FLOATING -- DRIVE ON TYPE -- TURNTABLES FOR WHEEL ALIGNING

DD-435 Pair — For all cars and trucks up to 7500 lbs. per wheel.

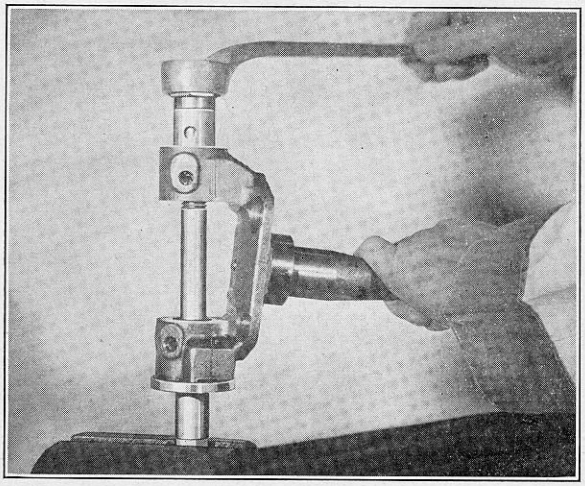
A pair of these rugged turntables is essential to any wheel alignment department. They allow accurate DD-428 Gauge readings with the full normal weight of the car on the front wheels. Each turntable follows all tire movements in any direction as large roller bearings provide smooth frictionless action. Adjustable degree scale eliminates any chance of error. A locking pin holds floating center plate until car is positioned. Finished in deep blue and orange with contrasting cadmium plate.



KING PIN BUSHING LINE REAMER

C-369 Size .795". For 1948 Kaiser and Frazer cars and later models equipped with pressed-in type bushings. Also all 1951 Henry "J" models.

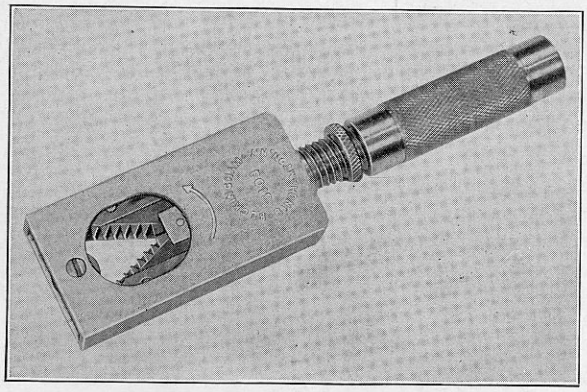
This reamer has a long lower pilot that aligns the reamer in the lower bushing as it finishes the upper bushing. A long top pilot then keeps the reamer aligned as the spiral fluted cutting blades finish the lower bushing. This is termed "Line Reaming" and assures longer wear and easy steering. Reamer is expandable from a few thousandths of an inch under standard to approximately .010" oversize. Spiral flutes avoid chatter and provide a smooth finish even in split type bushings. See page 56 for adjustable and replaceable spiral blade reamers.



KING PIN BUSHING REMOVER AND REPLACER

KF-32 For 1948 Kaiser and Frazer cars and later models equipped with pressed-in type bushings. Also all 1951 Henry "J" models.

Avoid cutting out worn and damaged bushings with a hammer and chisel by using this simple tool to safely pull old bushings out of the spindle. Same tool pulls new upper and lower bushings into position simultaneously. Attempting to drive split type bushings into a tight bore often causes them to roll up slightly resulting in loose, poorly fitting bushings. This usually causes hard steering and premature wear. Use this low-cost tool and save time and parts while giving your service customer a quality rebuilding job.



THREAD REPAIR TOOLS

DD-1162 Range ¼" to 1" diameter.

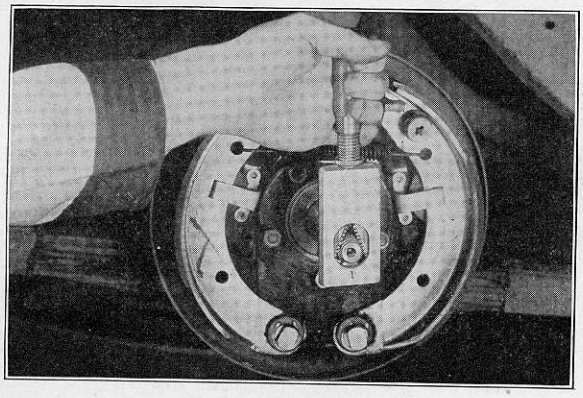
DD-1163 Range 2" to 4" diameter.

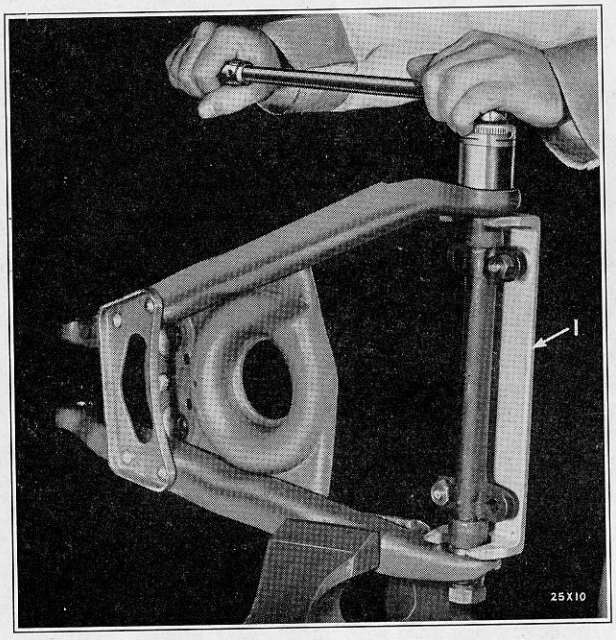
Small size ideal for repairing wheel hub bolts — axle shaft threads — front spindle threads — etc.

Large size is time and money saver for truck service shops — will repair rear axle tube threads up to 4" in diameter.

- Restores any Battered or Rusty Thread
- Restores Right and Left Hand Threads
- Cleans and Chases the Thread Right on the job
- Prevents Thread Stripping
- Prevents Cross Threading
- Easily Set to Diameter of Thread

Before attempting to ***start*** a nut on a bolt or stud in bad condition, use one of these simple tools and rechase the thread right on the job and prevent thread-stripping or cross-threading. When used first on a damaged bolt, it prevents further damage to the nut. Cleaners are easily set to root diameter of threads by knurled-handle screw adjustment. These tools should be in every automotive service shop. Order yours NOW!





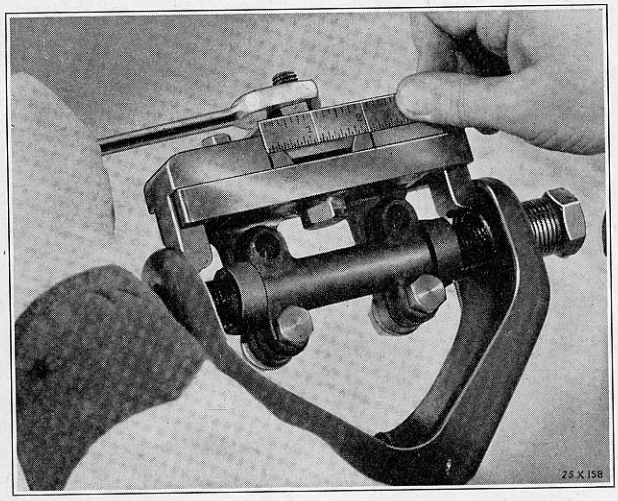
LOWER CONTROL ARM PIVOT BAR BUSHINGS INSTALLING GAUGE

KF-9 For all 1947, '48, '49, '50, and 1951 Kaiser and Frazer cars.

KF-118 For all 1951 Henry "J" cars.

Avoid squeezing the ends of the lower control arm too close together by using this simple gauge when installing replacement pivot bar bushings. The gauge drops between the two ends of the control arm and bolts to the pivot bar as shown. The self-threading replacement bushings can then be safely installed as the gauge will hold the formed arm to the proper shape as the new bushings cut their own threads in the control arm.

Through the use of this low-cost gauge this vital part can be profitably reconditioned and will again provide a smooth quiet ride. Attempting this service without using this tool usually collapses the control arm and results in a noisy rough-operating front end. See your factory service manual for reconditioning details.

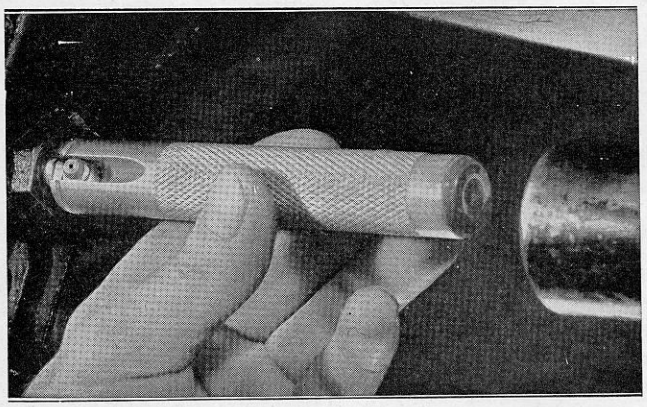


UPPER CONTROL ARM PIVOT BAR BUSHINGS INSTALLING GAUGE

KF-122 For all 1947, '48, '49, '50, and 1951 Kaiser and and Frazer cars. Also all 1951 Henry "J" models. ***(Supersedes KF-7 for Kaiser and Frazer cars only.)***

The upper control arm is serviced similarly to the lower control arm and also requires a special gauge to hold the arm from closing in from the pressure of the pivot bushings as they cut their own thread in the control arm. Your factory shop manual illustrates and describes the use of this gauge to properly rebuild the control arm assembly.

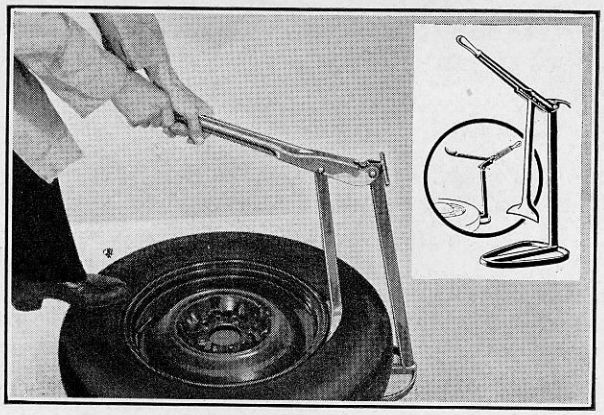
The gauge is first collapsed and inserted between the arms of the control arm. Install two bolts through the gauge and pivot bar and expand the gauge until the jaws are snug against the inner faces of the control arm. Measure space between marks on gauge jaws as shown. Tighten expander nut until gauge jaws spread arm 1/16". New self-threading pivot bar bushings can then be installed without danger of collapsing arm.



REPLACEMENT LUBRICANT FITTING DRIVERS

C-437 Pair — One offset and one straight — For all cars.

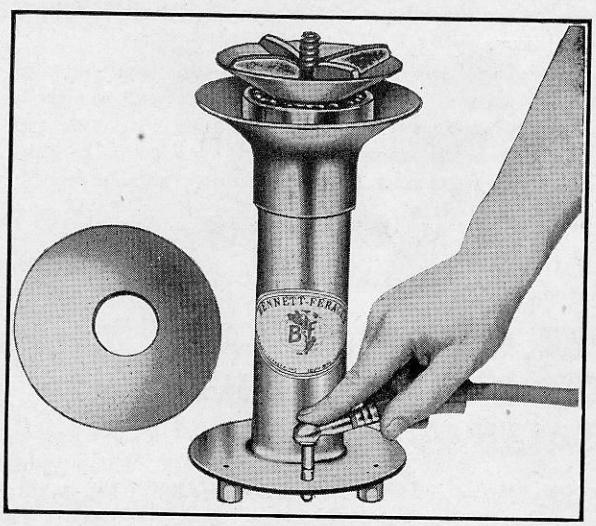
Most replacement parts, such as front spindles, tie rods, etc., are not tapped for screw type lubrication fittings but are machined for drive type fittings. These drivers protect new fitting while being driven in place as shown.



TIRE REMOVING TOOL

C-715 Equipped with Serrated Shoe For All Cars.

Service shops that repair a number of tires daily will find this fast acting, floor type tire bead breaking tool ideal for their needs. It prevents tire damage and marred rims while providing safe positive action on all drop center rims. Can also be used without removing wheel from car. Serrated shoe available separately for replacement on early model tools.

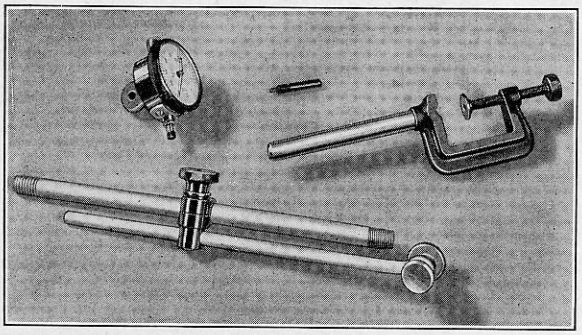


ROLLER AND BALL BEARING PACKERS

C-816 Bearing Capacity 6" dia.

DD-1051 Bearing Capacity 9½" dia.

Simplify bearing packing with these time saving tools. No lever grease gun is required — merely fill the lubricant reservoir with fibrous or preferred grease — install bearing and thoroughly lubricate by air pressure as illustrated. Air fitting in base of packers works with standard air hose eliminating waste and mess while speeding up lubrication. Be sure to install one or more in your lubrication and brake service departments.



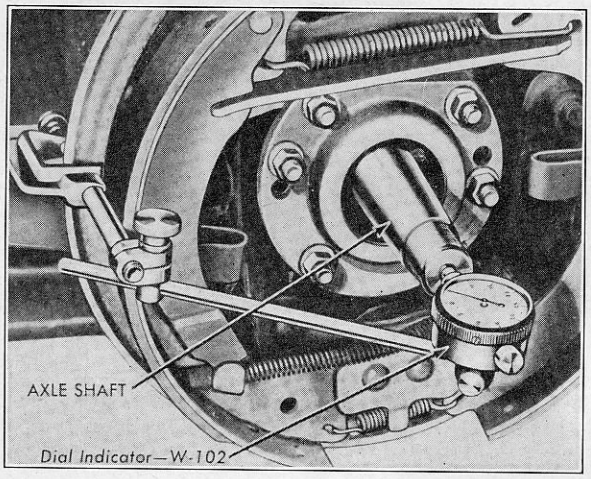
DIAL INDICATOR—CLAMP—SWIVEL AND ATTACHING RODS

C-430 Complete as illustrated for all cars.

C-430-A Complete as illustrated Less Dial Indicator.

Every service shop needs a set of dependable checking tools like this to accurately check ring gear backlash, axle shaft end play, bent shafts and a multitude of other regular service jobs.

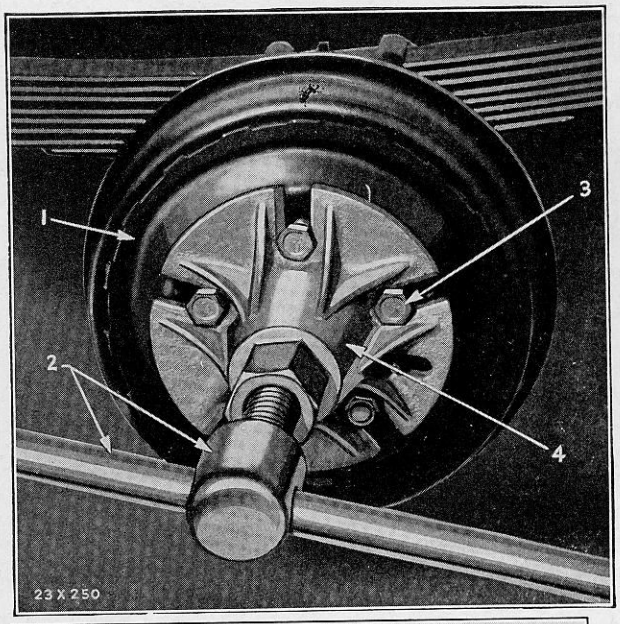
Dial indicator is 1¾" in diameter and calibrated in a plus and minus scale to easily read one thousandths of an inch calibrations. A long and short anvil is supplied for the indicator. Damaged indicators may be returned for immediate exchange for repaired indicators at nominal cost.



Dial Indicator—W-102

Special Clamp Provides Quick Attachment to Variety of Parts

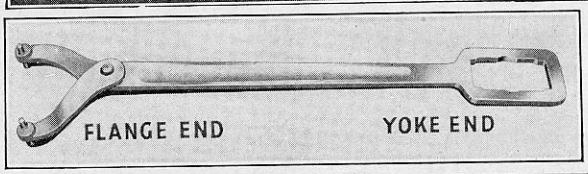
Illustrated at left is popular method of using dial indicator set for checking axle shaft end play. Clamp, swivel and rods are equally adaptable for using indicator for many other uses — see your factory service manuals for illustrations. Dial Indicator is same as used with W-99 Axle Gauge Set, and listed as W-102 Dial only.



REAR WHEEL AND HUB PULLER

C-319 Universal 5 stud type. Fits all 1947, '48, '49, '50, and 1951 Kaiser and Frazer cars. Also all 1951 Henry "J" models.

You'll find this solid "bell" type puller the fastest ***safe*** puller you can buy. There are no loose pieces to fumble, yet it fits all your most popular service jobs. Puller is made of reinforced heat-treated steel casting, rugged enough to pull the tightest wheels and stand up under punishing everyday shop service. Use this type of puller and avoid damage to bearings and axle shaft spacer blocks so often caused by using knock-off type pullers. The heavy-duty drive handle (arrow #2) is replaced with the forged type drive handle. It is available as an extra.

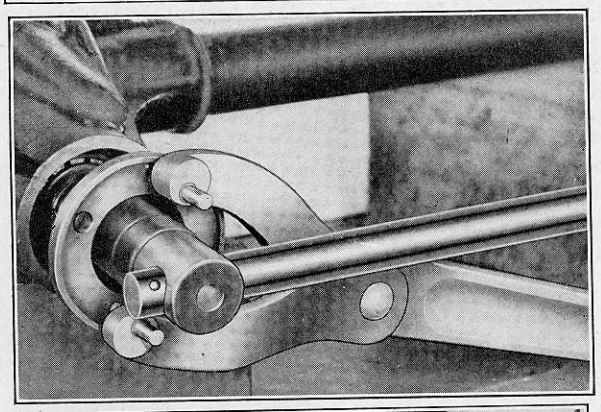


PINION COMPANION FLANGE OR YOKE HOLDING WRENCHES

C-784 For all cars.

Double End—Fits Both Round Flange and Cross Type Universal Joints

Attempting to hold the flange or yoke with an old pipe wrench or bar and causing damage to the yoke is no longer excusable. These husky double end wrenches make a one man job of loosening or tightening the tightest pinion nut. Handles are long enough to rest against floor and allow mechanic to use both hands on pinion nut wrench.

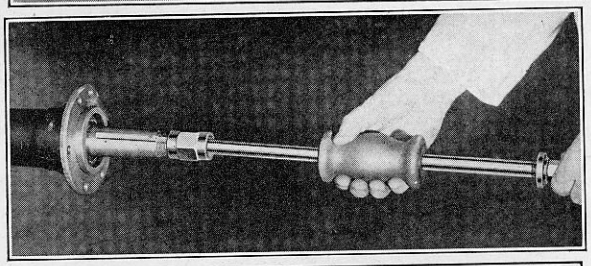


AXLE SHAFT PULLER

KF-15 For all 1947, '48, '49, '50, and 1951 Kaiser and Frazer cars. Also all 1951 Henry "J" models.

Puller is supplied with ¾", 13/16", ⅞" and 1" adapters that screw onto the end of practically all passenger car axle shafts. A forged steel hook is also included to quickly pull axle shaft seal.

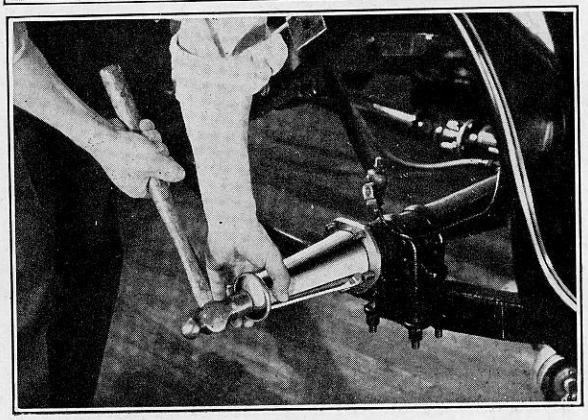
Because this puller is so quickly fitted to the job and is fast to use, it continues to be a year in, year out favorite of most all mechanics.

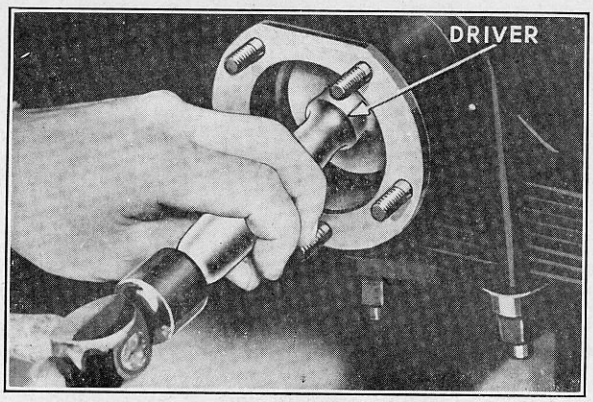


REAR AXLE SHAFT OUTER BEARING CUP DRIVER

C-413 For all 1947, '48, '49, '50, and 1951 Kaiser and Frazer cars. Also all 1951 Henry "J" models.

Compare the fast safe method of installing a rear axle shaft and bearing assembly with this easy-to-use driver with the haphazard hammer and punch method and we're sure you'll order several of these low cost drivers. One driver fits all models including single and double bearing axle shafts.





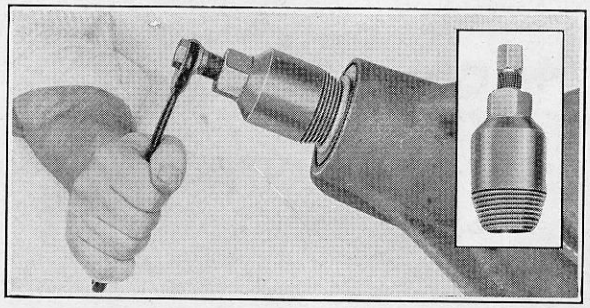
REAR AXLE SHAFT INNER OIL SEAL DRIVER

W-186 For all 1947, '48, '49, '50, and 1951 Kaiser and Frazer cars.

W-207 For all 1951 Henry "J" models.

Oil seal drivers like these are low-cost insurance against faulty oil seal installations. They are designed with accurate fitting pilots that will not over expand the inner portion of the seal yet are snug enough to hold the seal on the driver during installation, even in a deep counterbore.

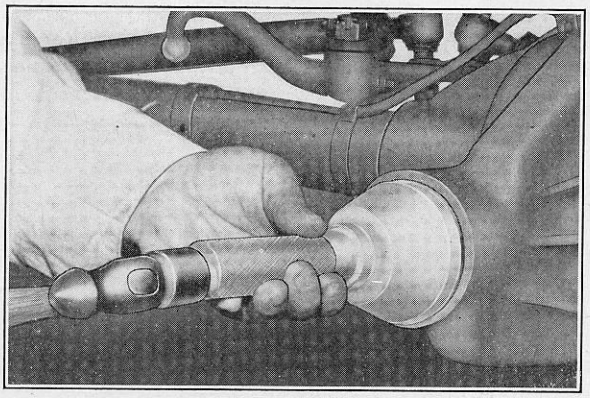
An extra driving blow after the seal is seated will help expand the outside diameter of the seal to prevent leakage around the outside diameter of the seal.



PINION AND TRANSMISSION SHAFT OIL SEAL PULLER

W-165 For all 1947, '48, '49, '50, and 1951 Kaiser and Frazer cars. Also all 1951 Henry "J" models.

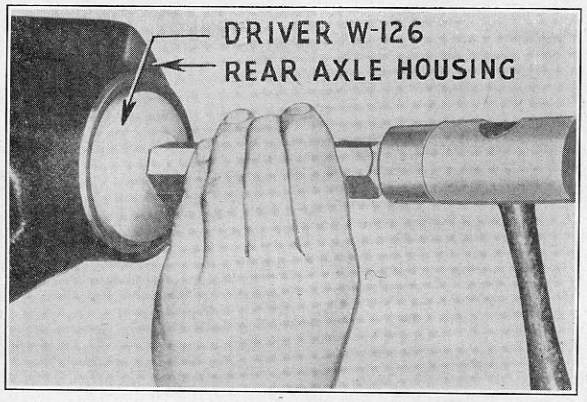
These fast, dependable pullers have sharp hardened buttress type puller threads that bite into an oil seal like a corkscrew. When puller "bottoms" in seal the turning pressure loosens seal in housing. Removing pressure is then applied to center screw against pinion shaft. May be used with differential in or out of vehicle.



PINION SHAFT OIL SEAL INSTALLING DRIVER

W-147 For all 1947, '48, '49, '50, and 1951 Kaiser and Frazer cars. Also all 1951 Henry "J" models.

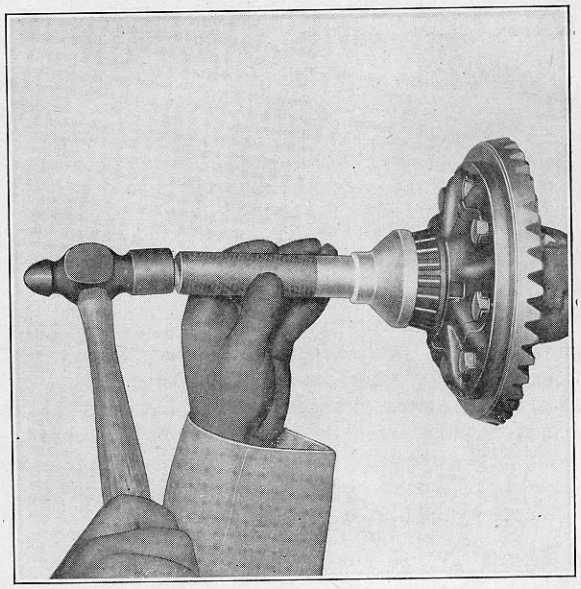
One incorrectly installed pinion oil seal and its resulting lubricant leakage can cause damage costing many times the value of this driver. Safeguard your service shop standards and your service customers' cars by using this properly designed driver to install these vital oil seals.



PINION SHAFT FRONT BEARING CUP DRIVER

W-126 For all 1947, '48, '49, '50, and 1951 Kaiser and Frazer cars. Also all 1951 Henry "J" models.

Correct replacement of this bearing cup is made easy and fast through the use of this special driver. Be sure to use it after removing or replacing this bearing cup during the re-conditioning and resetting of the ring gear and pinion. The proper driver for each job means better, quicker service which in turn makes more profit, no return jobs for bearing failures and increased customer good will.

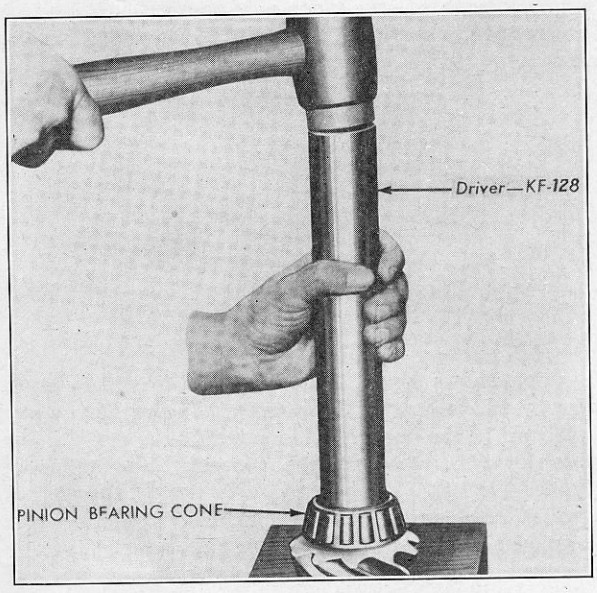


DIFFERENTIAL CASE BEARING CONE DRIVER

W-188 For all 1947, '48, '49, '50, and 1951 Kaiser and Frazer Cars.

W-142 For all 1951 Henry "J" models.

Many a new roller bearing has been ruined by attempting to install it with a flat wooden or steel block that pressed on the rollers just before the bearing reached its proper position. This special driver has a machined counterbore that clears the end of the rollers but pilots on their outer diameter to provide alignment. Pressure is applied to the hub of the bearing from a machined shoulder, thus avoiding bearing distortion. The proper driver for each job means better, quicker service jobs which in turn means more profit, no return jobs for bearing failures and increased customer goodwill.

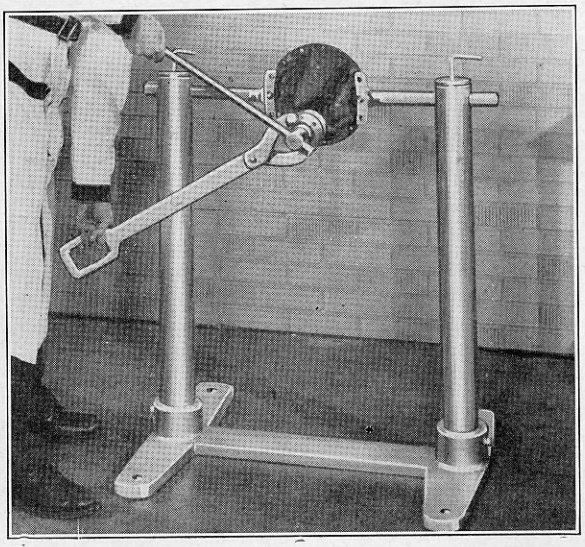


REAR AXLE PINION SHAFT BEARING DRIVER

Also Used to Install Transmission Main Drive Pinion Ball Bearing and Hydra-Matic Transmission Speedometer Gear

KF-128 For all 1947, '48, '49, '50, and 1951 Kaiser and Frazer Cars. Also all 1951 Henry "J" models. (Supersedes KF-11 Driver originally released for most of these services which is too shallow to accommodate late model cars.)

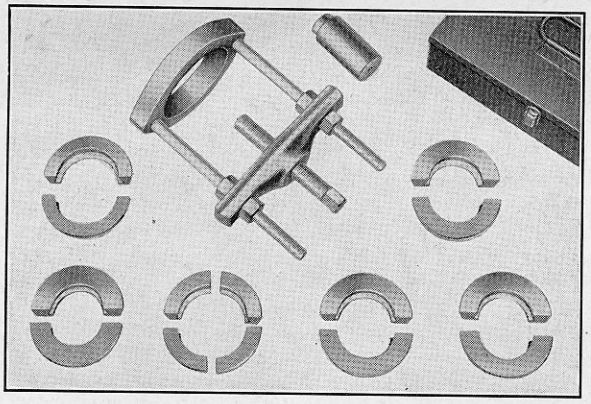
A special sleeve like this will save many bearings and hours of mechanic's time usually spent looking for some makeshift piece of pipe to install such bearings. Designed for use by hand or in an arbor press.



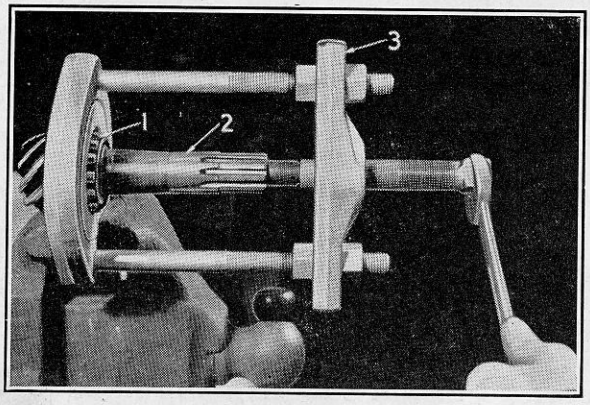
DIFFERENTIAL AND TRANSMISSION REPAIR STAND

DD-1014 For all Kaiser, Frazer and Henry "J" transmissions. Also most all other makes of differentials.

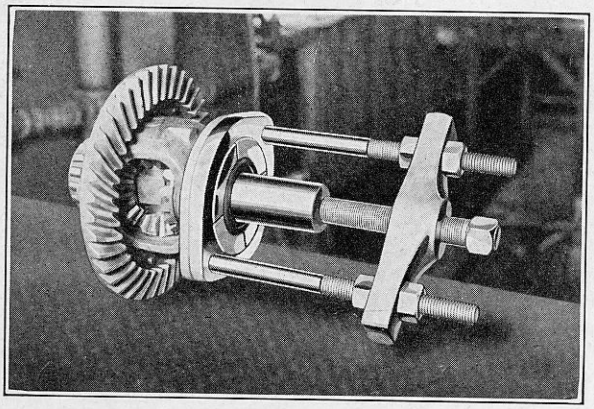
An efficient stand like this holds the transmission securely at a convenient working height. It saves much valuable time usually lost "wrassling" heavy units, such as these, on the floor. It encourages more accurate work and saves fatigue. Stand is rugged enough to safely service 3 and 4 ton truck differentials and transmissions. A bench type transmission and differential repair stand is illustrated and described on Page 70.



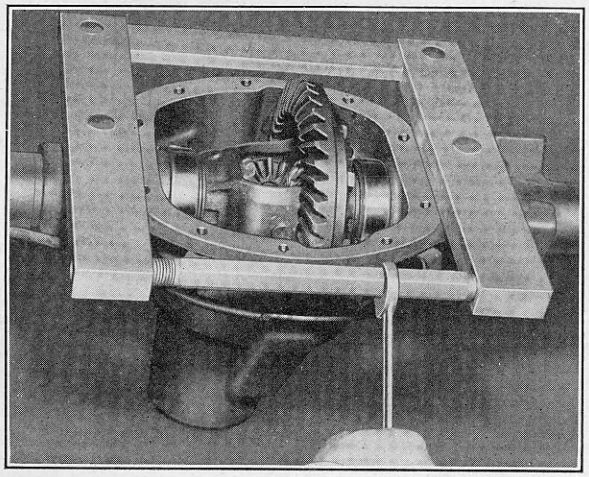
Adapter Plate Application Chart Packed With Every Tool.



Removing "Blind-Shouldered" Pinion Bearing.



Removing differential Side Carrier Bearing using SP-1100 adapter under main puller screw.



ROLLER BEARING PULLER SET

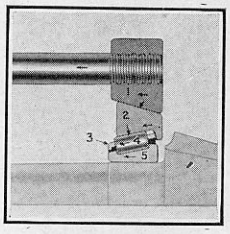
KF-3 Complete with adapter plates #13, 18 and 21. For all 1947, '48, '49, '50, and 1951 Kaiser and Frazer cars. Also all 1951 Henry "J" models. (Illustration shows extra plates for other cars. Owners of early model tools may adapt their pullers to Henry "J" models by ordering SP-1100 Adapter.)

Salvages Expensive Bearings From Damaged Shafts

Through the use of different size adapter plates, this one puller can be quickly adapted to remove various sizes of tapered roller bearings from axle shafts, pinion shafts, differentials, etc. It allows expensive roller bearings to be quickly salvaged from worn or damaged shafts. Chart is supplied with each puller set showing proper puller plate for each size bearing. Each size puller plate available separately —order by bearing number or plate number.

Can Be Used As A Portable Tool Or In Shop Arbor Press

Illustrations at left show how puller is assembled as a portable tool to safely remove various types of tapered roller bearings from most frequently serviced units. Puller base can also be used without top screw assembly in ordinary arbor press.



Transfers Pulling Pressure To Bearing Hub

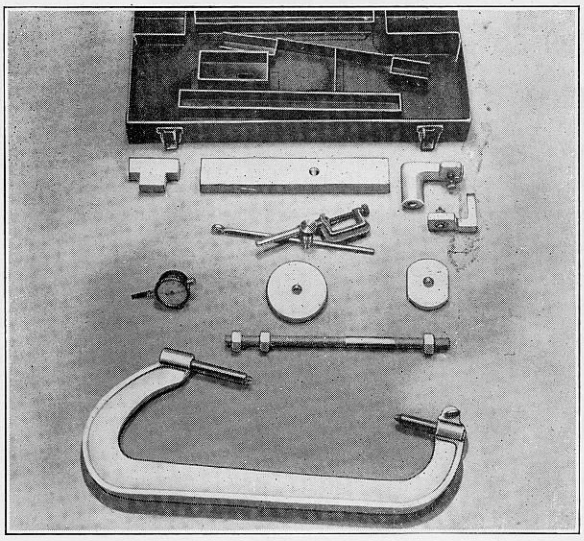
This illustration shows how pulling pressure is safely transferred directly to the hub of the bearing. The adapter plate No. 2 is locked in the taper of the puller base No. 1. The No. 2 adapter accurately fits the diameter and taper of bearing roller No. 4. Pulling pressure is safely transferred through roller retainer No. 3 to roller No. 4 which bears directly against bearing hub No. 5. This allows bearing to be safely removed even when pressed tightly against heel of pinion.

DIFFERENTIAL HOUSING SPREADER

W-129 For all 1947, '48, '49, '50, and 1951 Kaiser and Frazer cars. Also all 1951 Henry "J" models.

SAFE—Will Not Over Expand Axle Housing.

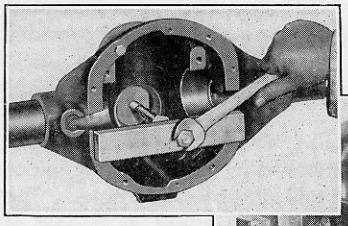
Because of the "built-in" preload on the differential side carrier bearings, the ring gear assembly is held very tightly in the axle housing. Through the use of this tool, the axle housing can be easily and safely spread .010" to .020". The ring gear assembly can then be freely lifted out of position, saving time, unnecessary extra effort and the possibility of costly damage should the assembly be pried or "beaten" from place. This spreader also allows the ring gear assembly to be reassembled by merely dropping it in place, eliminating any need of hammering which may cause premature bearing and gear failure. Spreader also fits other makes of popular cars using similar design of rear axle.



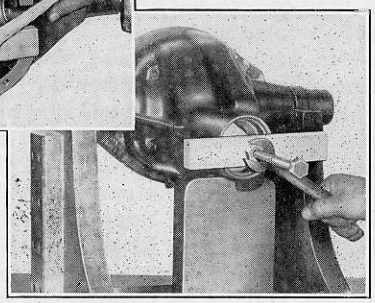
PINION AND RING GEAR GAUGE SET

W-99 Complete with W-101-13 "E" Gauge Block. For all 1947, '48, '49, '50, and 1951 Kaiser and Frazer cars. Also all 1951 Henry "J" models. Packed in fitted metal case.

W-99 Gauges sold prior to May 1951 were ***not*** equipped with W-101-13 "E" Gauge Blocks necessary for adjusting 1951 model 44 rear axles (hexagon shaped cover). Owners of these earlier gauge sets should promptly order W-101-13 "E" gauge blocks to adapt their gauges to the 1951 axles.



Removes and Installs Rear Bearing Cup.



Removes and Installs Front Bearing Cup.

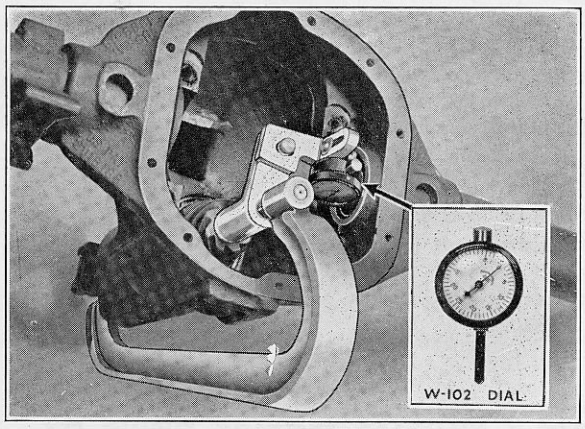
Simple, Easy-To-Use Gauge Assures Original Factory Accuracy For Rebuilt Axles

Through the use of this gauge even a semi-skilled mechanic can rebuild and accurately adjust a rear axle gear assembly on the FIRST try. A correctly adjusted set of gears and bearings not only is quieter but will give long, trouble-free service. A difference of a few thousands of an inch in the selection of a pinion locating shim can be the difference between a good and an unsatisfactory repair job. This gauge will show the correct size shim to use with the least possible effort.

No Micrometer to Read—Positive Easy-To-Use Dial Indicator Shows Shims Required

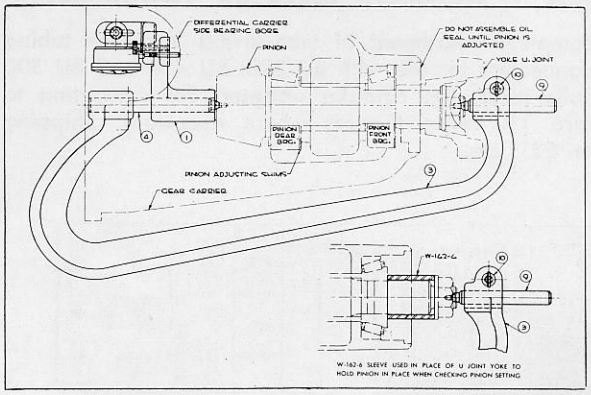
The large dial indicator checks location of pinion as easily as though you were checking the time on a watch. It eliminates confusion usually caused by necessity of accurately reading a seldom used micrometer.

Gauge set includes puller for removing and installing pinion shaft bearing cups. This allows the pinion locating shims to be changed without danger of causing errors due to wrinkled shims or a bearing cup not pulled solid against its locating shoulder.

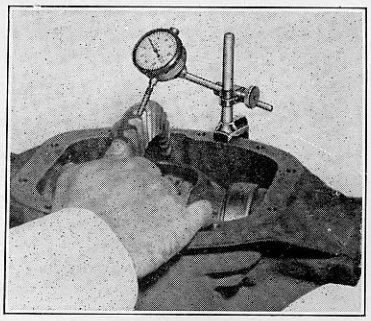


Easy-To-Follow—Illustrated Instructions Packed with Every Gauge Set—Also Pictured and Explained In Factory Service Manual

The instructions for accurately using this gauge set are simple—any semi-skilled mechanic can follow them with ease and speed. Your factory recommended rear axle service procedure is based and written on the use of this exact gauge set. The latest factory service methods and specifications, showing how this gauge set can help you, will be found in your official service manual.


DIFFERENTIAL CARRIER SIDE BEARING BORE
PINION
DO NOT ASSEMBLE OIL SEAL UNTIL PINION IS ADJUSTED
YOKE U. JOINT
PINION ADJUSTING SHIMS
GEAR CARRIER
W-162-6
W-162-6 SLEEVE USED IN PLACE OF U JOINT YOKE TO HOLD PINION IN PLACE WHEN CHECKING PINION SETTING

Gauge is Aligned To Pinion Shaft



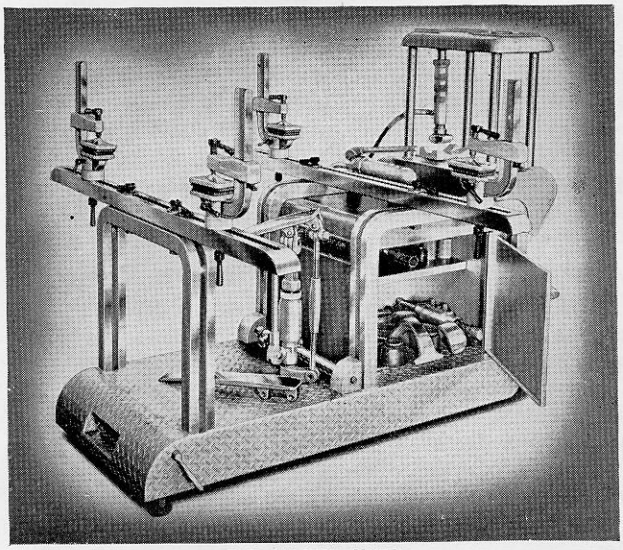
The ground face on the flat end of the pinion shaft is not always true with the gear teeth and, therefore, should ***not*** be used as a gauging point. The lightweight "U" type fixture of this gauge, however, aligns the dial indicator to the pinion shaft centers,

Includes Dial Indicator and Attachments for Checking Ring Gear Backlash

Your W-99 Gauge Set is complete. The same dial indicator (W-102) that is used to check the pinion location can be used with clamp and rods as shown above for accurate measuring of ring gear backlash. Proper backlash is very important to assure quiet, long life of a rear axle gear set.

MILLER Brings You the Newest PORTER-FERGUSON-Hydro-Method Body and Fender Repair Equipment

On the following 12 pages are the latest Hydro-Method Body and Fender Repair Tools and Equipment that magically transforms hydraulic power into your obedient slave while you use your head and save your back! This method is simple. It's fast. And it's better, because you can turn out a quality of work impossible with old-fashioned, antiquated methods. But no pictures or descriptions can do it justice. You've got to see it. You've got to feel it. Try it. Then you'll agree that it surpasses anything you have ever imagined. All items available immediately from Miller's complete stock.



5-A MASTER UNIT

5-A MASTER UNIT

Contains all equipment illustrated at bottom of page

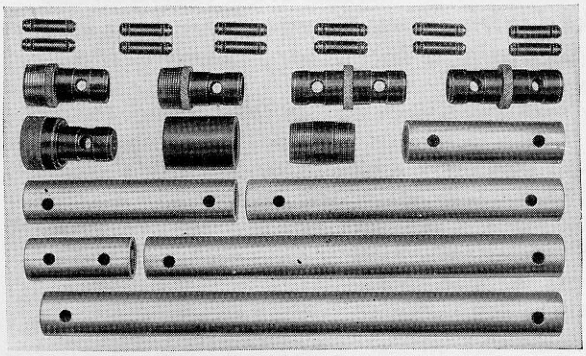
All major body and fender repairs can be made with the Master 5-A Hydro-Method Unit shown at left. Diamond plate base has rugged box frame construction and provides a solid Jacking Platform. It glides smoothly on large rubber- tired casters, but may be held stationary by means of a foot-operated brake.

Standard equipment includes Single and Double Door Bar Assemblies which can be stored in the base. Ingenious "trigger-action" Clamps hold any and all body panels. The Rocker Action Assembly may be used either as a part of the Unit or separately. Twelve Power Tools are included especially for use with the new streamlined bodies. There is also a complete set of Extension Tubing with chamfered threads, together with a length Adjuster and two Rubber Bases. The Shop and Arbor Press, mounted on the rear of the 5-A Unit, handles all pressing operations up to 20,000 lbs. capacity. Hydraulic equipment consists of a 10,000 lb. Direct Action Body Jack and a 15,000 lb. Remote Control Jack. A 21 foot lead cord brings electricity to a double convenience outlet on the base. Dimensions: approx. 26" x 62" x 32" high. Shop Press approx. 19½" between platens. Overall height including Press, approx. 55". Shipping weight 776 lbs.

5-AY Unit is the same as 5-A but with time-saving Speedlok Tubing (Unit Y) substituted for threaded tubing (Unit J).

3-B Standard Unit is same unit as 5-A but without Shop Press (Unit K).

3-BY Unit is same as 5-AY but without Shop Press. Shipping weight: 586 lbs.



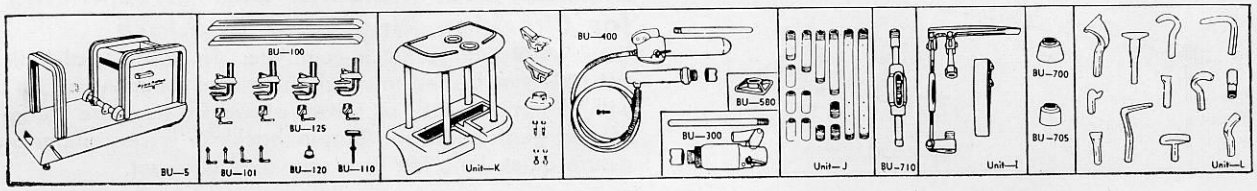
UNIT Y

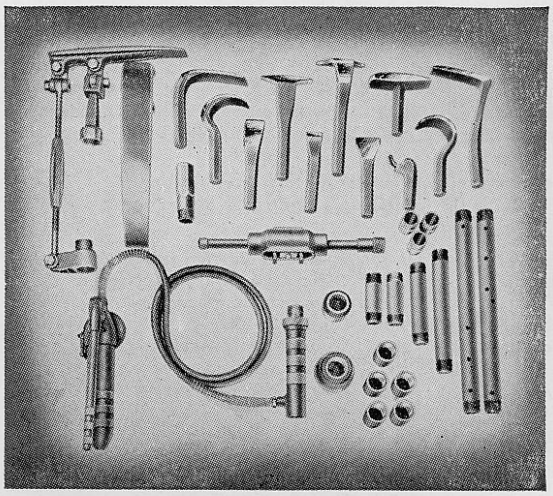
UNIT Y CONTAINS:

SL 1	Male Threaded Adapters (2)	SL 12	12" Speedlok Tube Extension
SL 2	Female Threaded Adapter	SL 16	16" Speedlok Tube Extension
SL 4	4" Speedlok Tube Extension	SL 20	20" Speedlok Tube Extension
SL 6	6" Speedlok Tube Extension	BU 725	Close Nipple
SL 7	Pins (12)	BU 731	Standard Coupling
SL 8	8" Speedlok Tube Extension		
SL 9	Connectors (2)		

UNIT Y STANDARD SPEEDLOK TUBING SET

The complete assortment of time-saving Speedlok tubing and connectors for use with BU 300, BU 400 and BU 500 hydraulic jacks. Set contains adapters for converting to standard 1¼" pipe threads where necessary. Shipping weight: 22½ lbs.





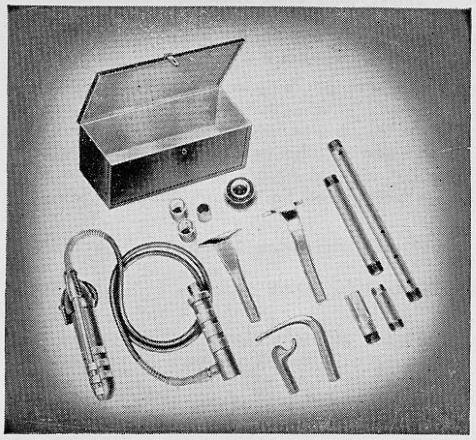
UNIT F MINOR BODY AND FENDER REPAIR UNIT

A combination of power tools, rocker spoon, tubing, length adjuster and rubber bases powered by a BU 400 7½-ton remote control all-position jack. Packed in a substantial shipping container. There is a standard equipment shop board available for this unit at a small additional cost. Shipping weight: 124 lbs.

Unit FY is the same as Unit F but with Speedlok tubing (Unit Y) substituted for threaded tubing (Unit J).

Unit F Contains:

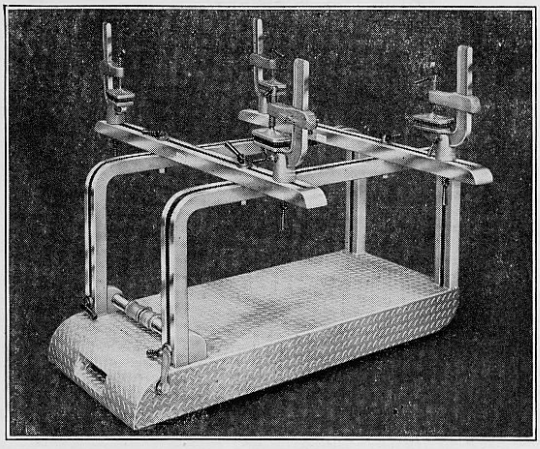
BU 400 7½-Ton Hydraulic Jack, Remote Control, All-Position
BU 580 Hydraulic Jack Base
BU 700 Large Rubber Base
BU 705 Small Rubber Base
BU 710 Length Adjuster
Unit I Rocker Spoon Assembly
Unit J Set of Tubing
Unit L Set of Power Tools (12 tools)



1 E SMALL EQUIPMENT UNIT

An economical and compact power unit containing only those items which are essential for minor body and fender repair. Includes the BU 400 7½-ton remote control hydraulic jack and five of the most commonly required power tools. Complete unit is furnished in BU 90 metal box. Shipping weight: 76 lbs. Unit 1 E contains the following:

BU 90 Metal Tool Box
BU 400 Remote Control 7½-Ton All-Position Push Jack
BU 700 Large Rubber Base
BU 725 Short Nipple
BU 727 6" Tubing Extension
BU 729 12" Tubing Extension
BU 730 20" Tubing Extension
BU 731 Heavy Duty Couplings (2)
JBP 11 Quarter Panel Molding Spoon
JCW 9 Cowl and Lower Quarter Panel Spoon
JH 4 Fender Hook
JHD 6 Hex Adapter
JTR 7 Top Rail Spoon

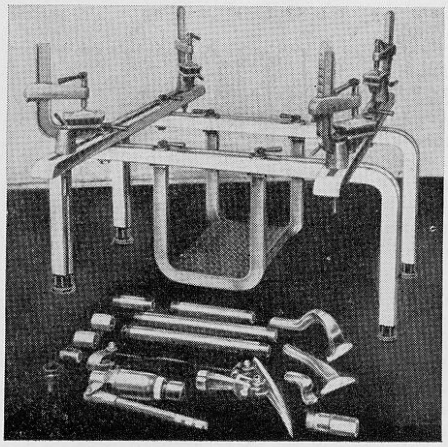


4 A BODY REPAIR UNIT

Very similar in content to the 3 B Unit and also containing two hydraulic jacks. While the BU 4 chassis does not provide cabinet space it has the advantage of full platform jacking area. A very popular unit; frequently used as supplementary equipment in larger shops. Dimensions: 24" x 56½" x 29½". Shipping weight: 539 lbs. Unit 4 AY is the same as 4 A but with Speedlok tubing (Unit Y) substituted for threaded tubing (Unit J).

Unit 4 A contains:

BU 4 Mobile Unit
BU 100 Door Bars (2)
BU 101 Door Bar Bolt Assemblies (4)
BU 110 Center Support
BU 120 Clamp Stud Adapter
BU 125 Clamps with Adapters (4)
BU 300 5-Ton Direct Action All-Position Hydraulic Jack
BU 400 7½-Ton Remote Control All-Position Hydraulic Jack
BU 585 Ram Base Plug
BU 700 Large Rubber Base
BU 705 Small Rubber Base
BU 710 Length Adjuster
BU 775 Pull Arm Guide
BU 905 Short Push-Pull Toe
BU 912 Long Push-Pull Toe
JBP 11 Quarter Panel Molding Spoon
JCW 9 Cowl and Lower Quarter Panel Spoon
JH 4 Fender Hook
JHD 6 Hex Adapter
JMR 3 Upper Rear Quarter Panel Spoon
JOP 1 Offset Pushing Tool
JTR 7 Top Rail Spoon
JWC 3 Caulking Iron
Unit I Rocker Spoon Assembly
Unit J Tubing Set

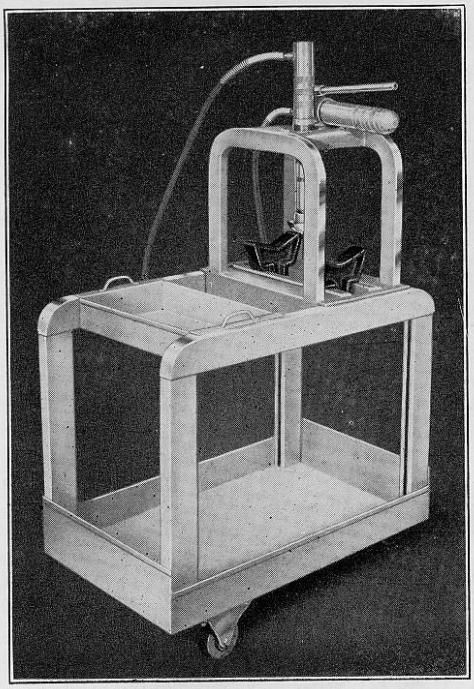


4 B HYDRO-JIG

Combines a pair of stands with jacking platform to make a highly efficient and versatile holding and jacking unit. Powered by the BU 300 5-ton direct action all-position Hydro-Method jack. Legs are adjustable to any convenient working height. A feature of this unit is compact storage; by removing the speed bolts the entire unit may be quickly dismantled and nested in very small space. Shipping weight: 284 lbs. Dimensions (set up): 53" x 55" x 33".

The 4 B Unit Contains:

BU 100 Door Bars (2)
BU 101 Door Bar Bolts Complete (4)
BU 105 Holding Stands (2)
BU 106 Jacking Platform Complete with Four Bolts and Washers
BU 125 Clamps Complete with Adapters (4)
BU 142 Screw Assembly (4)
BU 201 13" Rocker Spoon
BU 215 Rocker Spoon Ram Adapter
BU 220 Rocker Spoon Base
BU 225 Rocker Spoon Ram Hinge Adapter
BU 230 Rocker Spoon Link Hinge Adapter
BU 250 Rocker Spoon Turnbuckle Assembly
BU 276 Rocker Spoon Connecting Bolts (5)
BU 300 Five-Ton Direct Action All-Position Jack Complete
BU 705 Small Rubber Base
BU 725 Short Nipple
BU 727 6" Tubing Extension
BU 729 12" Tubing Extension
BU 730 20" Tubing Extension (2)
BU 731 Heavy Duty Couplings (2)
JH 4 Fender Hook
JHD 6 Hex Adapter
JTR 7 Top Rail Spoon
JBP 11 Quarter Panel Molding Spoon



2 B PRIMARY MOBILE UNIT

An ideal compact body repair unit for shops whose work is limited in scope or volume. A carefully selected assortment, powered by the BU 400 7½-ton remote control jack. The BU 1 Mobile Unit can be supplemented by BU 20 trays if desired. Finished attractively in red and grey. Unit 2 BY same as Unit 2 B but with Speedlok tubing (Unit Y) substituted for Unit J.

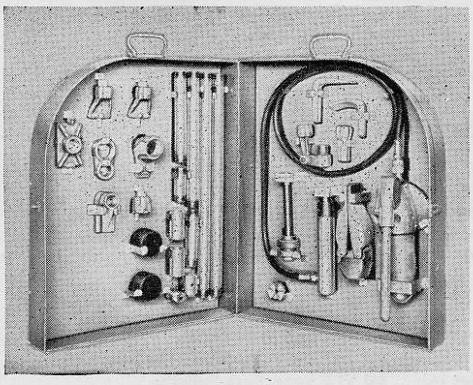
Units 2 B and 2 BY may be purchased without shop press assembly Unit U. Dimensions of Cabinet 34" x 21" x 30". Shipping weight: 261 lbs.

Unit 2-B contains:

BU 1	Mobile Cabinet
BU 215	Rocker Spoon Ram Adapter
BU 220	Rocker Spoon Base
BU 276	Rocker Spoon Connecting Bolt
BU 400	7½-Ton Remote Control Jack
BU 580	Jack Base
BU 585	Ram Base Plug
BU 700	Large Rubber Base
BU 705	Small Rubber Base
BU 710	Length Adjuster
BU 775	Pull Arm Guide
BU 905	Short Push-Pull Toe
BU 906	90 Degree Pushing Cap
BU 907	Offset Spreading Tools (Two)
BU 908	Bumper-Straightener Cap
BU 912	Long Push Toe
JBP 11	Quarter Panel Molding Spoon
JWB 6	Corner and Header Panel Spoon
JCW 9	Cowl and Lower Quarter Panel Spoon
JHD 6	Hex Adapter
JTR 7	Top Rail Spoon
JWC 3	Caulking Iron
Unit J	One Set of Tubing
Unit U	Shop Press Assembly

1 V HYDRO-MIDGET UNIT

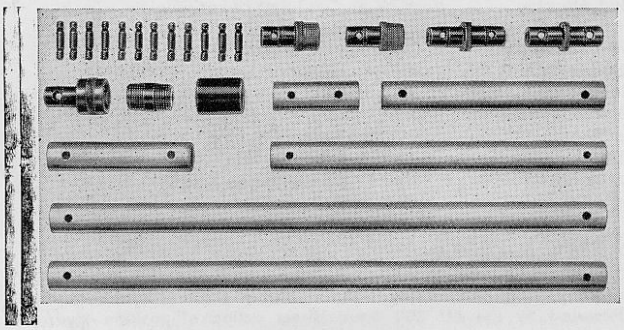
The complete assortment of lightweight, high strength attachments, together with the BU 200 remote control hydraulic jack, contained in a handsome and efficient carrying case. The perfect answer to the demand for a fast, inexpensive hydraulic unit capable of doing a high percentage of light body work, such as aligning and repair of minor damage. Includes a compact toggle-action spreader with retractable jaws. Each piece held in the case by spring clips and with silhouetted background for easy checking of equipment. Shipping weight: 66 lbs.



Unit 1 VX is the same unit as 1 V but with time-saving Speedlok tubing (Unit X) substituted for threaded tubing.

Both units 1 V and 1 VX also available without the BU 99 case. The 1 V Hydro-Midget Unit contains the following:

BU 37	Pull Arm Guide
BU 38	Pull Arm Base Assembly
BU 39	Jack Body Toe
BU 40	Ram Extension Toe (Two)
BU 41	Jack Base
BU 42	Vee Notch Cap
BU 43	Rubber Head (Two)
BU 44	Offset Spreading Toe (Two)
BU 45	Ram Base Plug
BU 46	Short Nipple
BU 47	Short Coupling
BU 48	Long Coupling (Two)
BU 50	20" Tube Extension (Two)
BU 52	12" Tube Extension
BU 53	3" Tube Extension
BU 55	5" Tube Extension
BU 58	8" Tube Extension
BU 60	Length Adjuster
BU 75	Spreader
BU 91	Hex Adapter
BU 92	Quarter Panel Spoon
BU 93	Metal Top Spoon
BU 99	Carrying Case and Tool Holder
BU 200	Remote Control, 3-Ton Jack, Complete

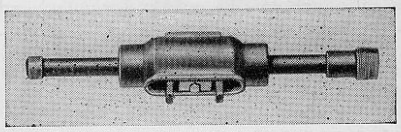


UNIT X HYDRO-MIDGET SPEEDLOK TUBING SET

A combination of Speedlok tubing and connectors for use with the BU 200 Hydro-Midget hydraulic jack. Set contains adapters for converting to regular ¾" diameter threaded tubing where necessary. Shipping weight: 11 lbs.

Unit X contains:

MSL 1	Male Threaded Adapters (2)
MSL 2	Female Threaded Adapter
MSL 3	3" Speedlok Tube Extension
MSL 5	5" Speedlok Tube Extension
MSL 7	Pins (12)
MSL 8	8" Speedlok Tube Extension
MSL 9	Connectors (2)
MSL 12	12" Speedlok Tube Extension
MSL 20	20" Speedlok Tube Extension (2)
BU 46	Short Nipple
BU 47	Short Coupling



BU 710 LENGTH ADJUSTER

Gives six inches of instantaneous adjustment. Double friction lock holds securely at desired length. Adjusted by convenient double trigger release. Shipping weight: 12 lbs.

BU 700 LARGE RUBBER BASE
BU 705 SMALL RUBBER BASE

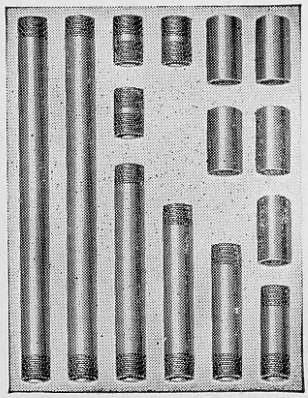
Resilient, yet firm, these bases will neither slip nor mar the surface. Impervious to oils and greases. Rubber is vulcanized to standard 1¼" metal core. Shipping weights: BU 700, 3 lbs.; BU 705, 2 lbs.

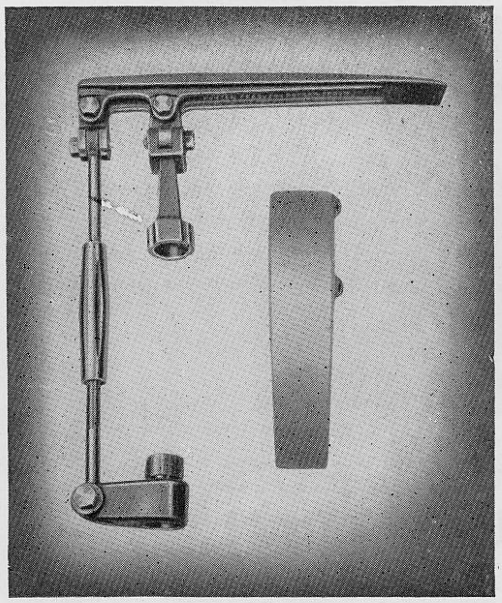
UNIT J REGULAR TUBING SET

A high-grade and carefully assorted selection of threaded tubing extensions for use with BU 300, BU 400 and BU 500 jacks. Nipples have holes for easy tightening and loosening. Shipping weight: 27 lbs.

Unit J contains:

BU 725	Short Nipples (3)
BU 726	5" Tubing Extension
BU 727	6" Tubing Extension
BU 728	8" Tubing Extension
BU 729	12" Tubing Extension
BU 730	20" Tubing Extension (2)
BU 731	Heavy Duty Couplings (5)

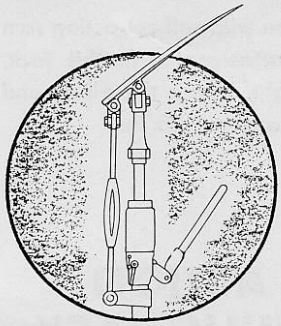


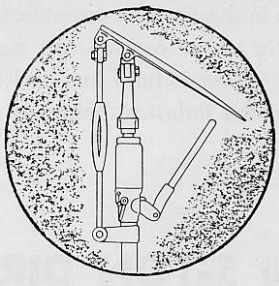


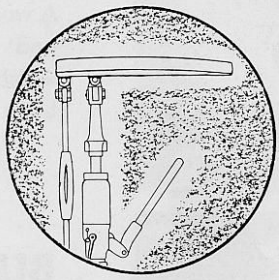
UNIT "I" ROCKER SPOONS

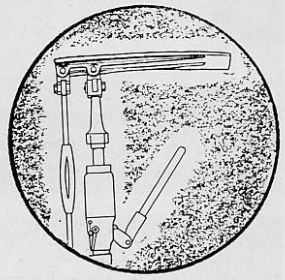
An exclusive Hydro-Method invention, the Rocker Spoon provides rapid and flexible means for pushing out large damaged areas, particularly behind inner construction. Point of application of pressure is controlled without changing set-up and while pushing by simple turnbuckle adjustment. Fits all standard hydraulic jacks. A tremendous time-saver. Shipping weight: 27 lbs.

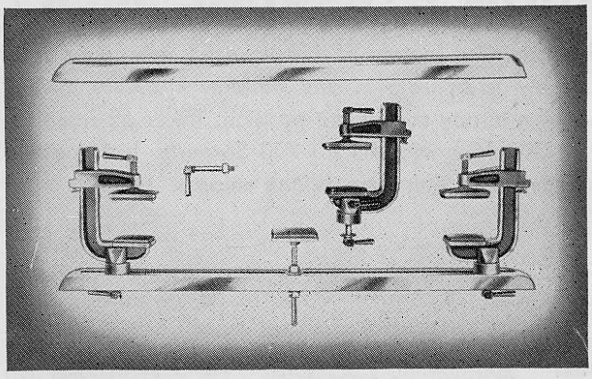
BU 201 13" Rocker Spoon
BU 202 18" Rocker Spoon
BU 215 Rocker Spoon Ram Adapter
BU 220 Rocker Spoon Base
BU 225 Rocker Spoon Ram Hinge Adapter
BU 230 Rocker Spoon Link Hinge Adapter
BU 250 Rocker Spoon Turnbuckle Assembly
BU 276 Rocker Spoon Connecting Bolt

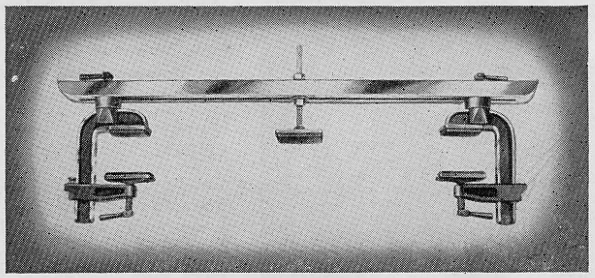


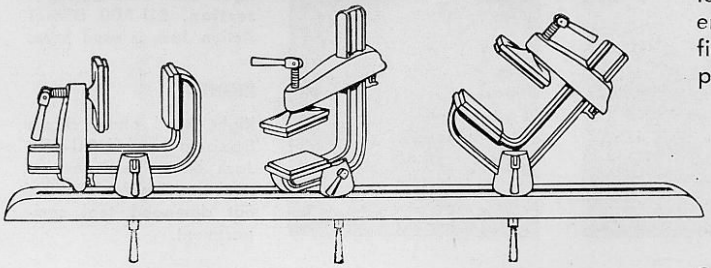












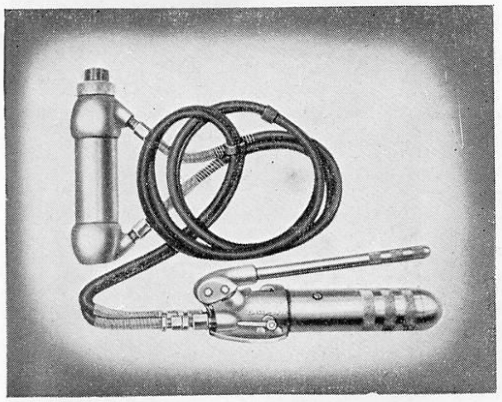
"G" DOUBLE DOOR BAR UNIT

The Double Door Bar Assembly is formed from parts of the Clamping Assembly of the 5-A Master or the 3-B Unit, or can be purchased separately as Unit "G". It provides three-point anchorage and may be installed directly on the car door to straighten and align the largest and most streamlined door panels, particularly those with irregular shapes. Shipping weight: 88 lbs.

"H" SINGLE DOOR BAR UNIT

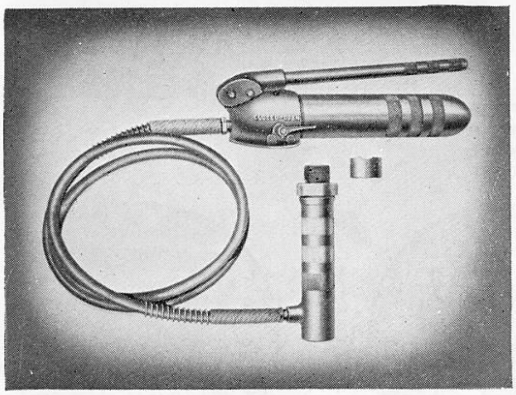
The Single Door Bar Assembly consists of one Door Bar and provides two-point anchorage. While it is not as versatile as the Double Door Bar Assembly and cannot be used on as large doors or on some irregularly shaped doors, nevertheless it has a wide field of usefulness. Shipping weight: 55 lbs.

ABOVE: Illustrates double door bar hook-up to increase pressure at outer end of large door.
Illustration at left shows just a few of the various positions to which the clamps can be adjusted.
All clamps have removable rubber pads.



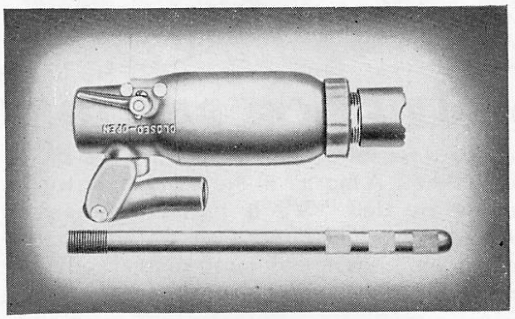
BU 500 12½-TON PUSH-PULL REMOTE-CONTROL HYDRAULIC JACK

A push-pull Jack with 12½-ton capacity on direct push and 7½-ton capacity on direct pull. All-position, with self-retracting ram and instantaneous single lever valve control. An essential jack for efficient handling of heavy body and light frame work. Shipping weight: approx. 40 lbs.



BU 400 7½-TON REMOTE-CONTROL ALL-POSITION HYDRAULIC JACK

A workhorse in the popular remote-control type with self-retracting ram and finger-tip valve control. All standard attachments fit this jack, which for its power is both fast and lightweight. This is the all-around body jack of the industry. Shipping weight: approx. 28 lbs.



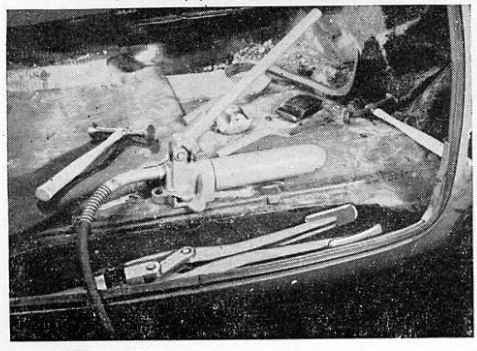
BU 300 5-TON DIRECT ACTION ALL-POSITION HYDRAULIC JACK

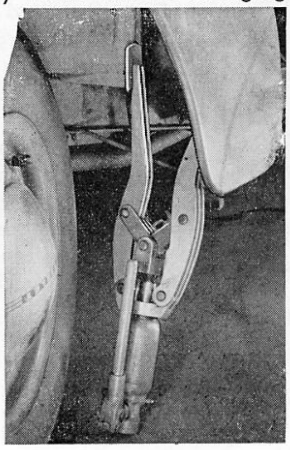
The exclusive and outstanding feature of this powerful, compact direct-action jack is its ability to operate in any position whatever. Swivel handle permits pumping in any convenient position. Takes all standard attachments. The BU 300 Jack with the BU 750 Spreader is "tops" for fast fender and trunk repairs. Shipping weight: approx. 16 lbs.

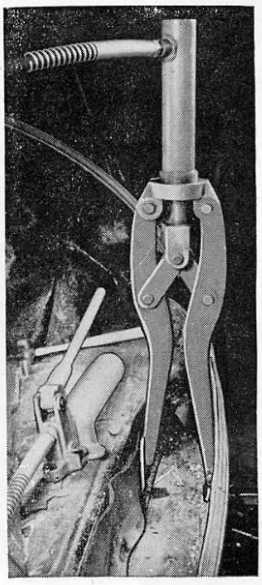
BU 750 POWER SPREADER

Used With BU-300, BU-400 or BU-500 Jacks

Designed especially for fender work where it fits between the frame and the crumpled part of the fender, this Spreader has many other uses due to its ability to close to approximately 1½" and get into very narrow places. It quickly pushes out large damaged areas to a maximum spread of 15½". One arm is fitted with a hinged dolly which follows changing contours. The Spreader arms are free to rotate on the Jack Ram so that the Jack may be turned for convenience. Standard 1¼" fittings. Shipping wt.: approx. 18 lbs.







LEFT:

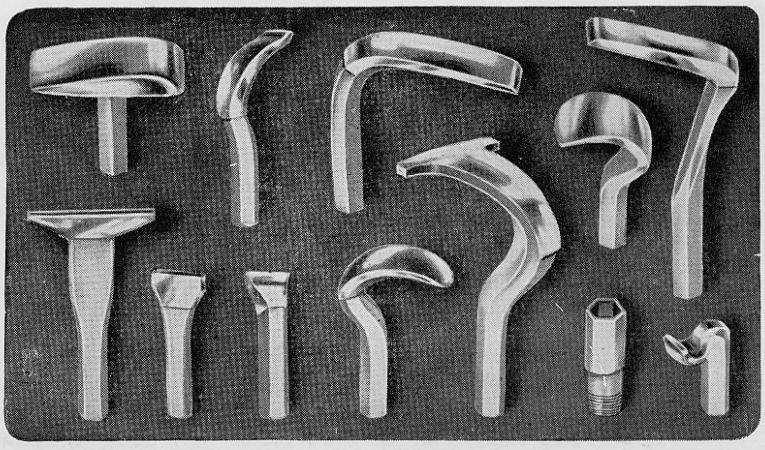
Photo at extreme left shows Spreader being used with BU-400 Remote Control Jack to push out damaged tool compartment.

CENTER:

Center photo shows Spreader braced between frame of car and fender to push out damaged area in low crown section. BU-300 Direct Action Jack is used here.

RIGHT:

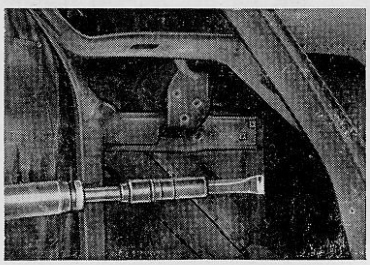
Right hand photo shows Spreader and BU-400 Jack being used in vertical position for pushing out damaged tool compartment.



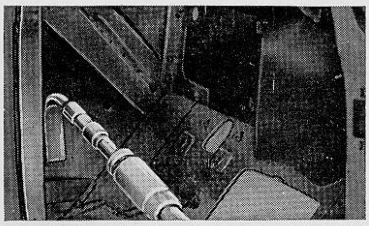
UNIT "L" POWER TOOL SET

These tools are universally used with hydraulic jacks for pushing out damaged areas to original contours with maximum speed and precision. They reach over inner construction where necessary. Also generally used as hand tools for finishing work. Shipping weight: approx. 38 lbs.

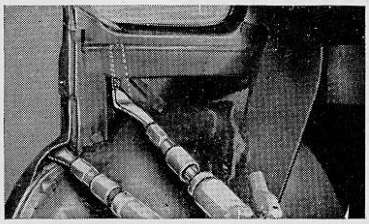
JHD-6 HEX ADAPTER. Provides a rapid means for connecting any of these tools to hydraulic jacks.



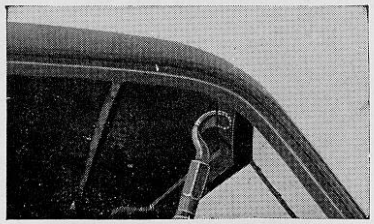
JOP-1 OFFSET PUSHING TOOL. The offset design of this tool makes it suitable for pushing operations on radiator shells, grills, etc.



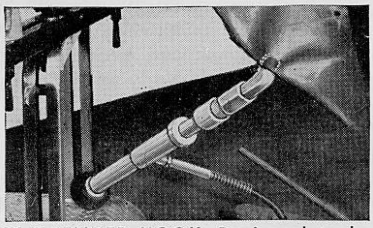
JCW-9 COWL AND LOWER QUARTER PANEL SPOON. For use behind lower cowl and lower quarter panels.



JWP-12 QUARTER PANEL PUSHER SPOON. Used with body jack to reach behind drain gutter.

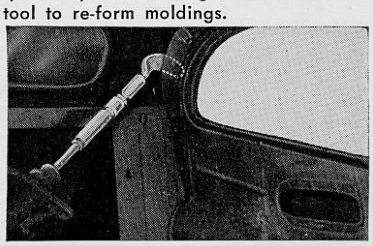


JWB-6 CORNER AND HEADER PANEL SPOON. Used with body jack to reach behind header panel inner construction.

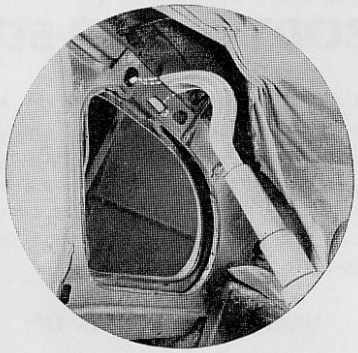


JH-4 FENDER HOOK. Designed to be used with power jack to relieve backward strain in fenders.

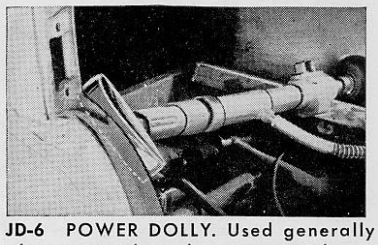
JBP-11 QUARTER PANEL MOLDING SPOON. Used with body jack to push out quarter panel moldings; also as a hand tool to re-form moldings.



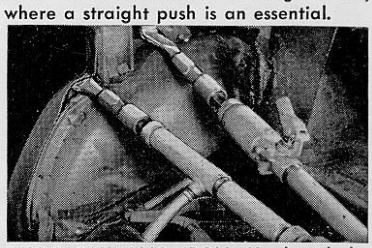
JMR-3 UPPER REAR QUARTER PANEL SPOON. Used with body jack to repair high crown area of upper rear quarter panel.



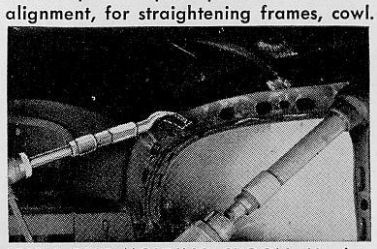
JTR-7 TOP RAIL SPOON. Deep throat of spoon enables operator to reach over side of roof rail without removing inner construction.



JD-6 POWER DOLLY. Used generally where a straight push is an essential.



JWC-3 CAULKING IRON. Used with hydraulic jack to push panel reveals into alignment, for straightening frames, cowl.



JDM-4 DRIP MOLDING SPOON. Used to reach over top-rail inner construction and jack out sharp kinks in the drip molding sections of upper quarter panels.

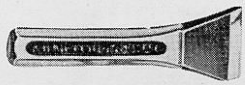
NEW TOOLS (Not included in Unit "L")

JWC 4 HIGH CROWN CAULKING IRON

Necessary for newer car contours for door and trunk reveals as well as door pillars. Makes caulking of high crown surfaces easy and quick.

JWC 5 LOW CROWN CAULKING IRON

Fits low crown trunk reveals and door pillars.



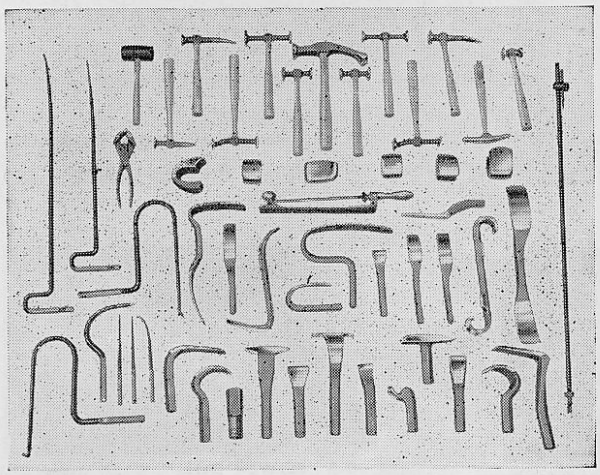
JWC 6 BEVELED CAULKING IRON

For new style bodies; tops of door openings, trunk and hood reveals.

BODY AND FENDER REPAIR HAND TOOL SETS

Porter-Ferguson Hand Tools for body and fender repair form the perfect complement to the Hydro-Method line of equipment and represent the most advanced design in the industry.

Many car dealers find it advantageous to help their body repair men obtain the latest time and effort saving hand tools such as these by ordering them for their men. Body men can then repay their employer out of regular earnings.

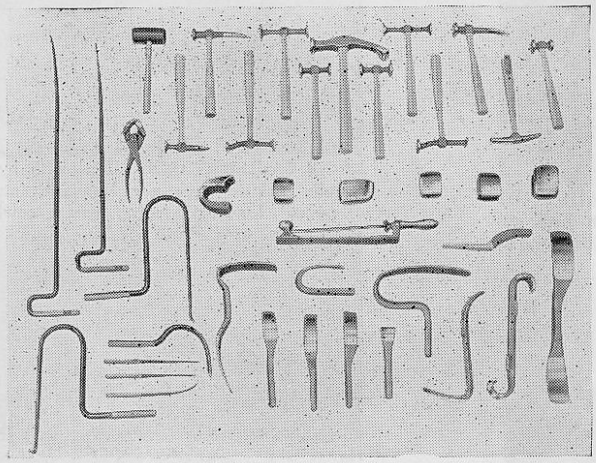


UNIT "N" MASTER HAND TOOL SET

The most complete set of hand tools ever assembled for the modern body and fender shop. Includes all hammers, dolly blocks, finishing spoons, Porter-Ferguson Pick Tools and twelve Power Tools which can be used either with body jacks or manually. The fifty-four tools in this set are of best quality metal obtainable and of finest workmanship. Working faces are precision ground to absolute conformation of latest style body and fender contours.

UNIT "N" CONSISTS OF:

12 Power Tools; 8 Pick Tools; 10 Body Hammers; 1 Roughing Out Hammer; 1 Trim Hammer; 1 Lignum Vitae Mallet; 3 Surfacing Spoons; 5 Body and Fender Spoons; 6 Dolly Blocks; 1 Caulking Tool; 1 Fender Beading Tool; 1 Adjustable File Holder; 1 File; 1 Solder Paddle; 1 Pr. Drip Moulding Pliers; 1 Telescoping Body and Frame Alignment Gauge.

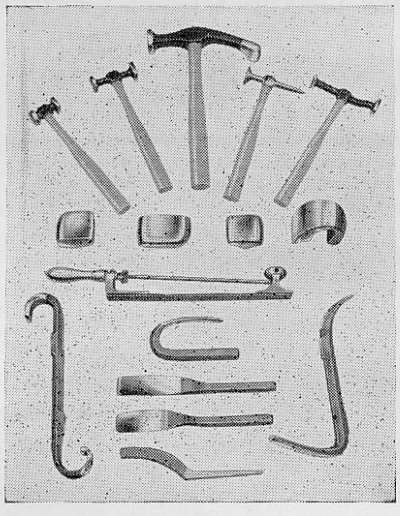


UNIT "O" BODY MECHANIC'S HAND TOOL SET

This set is designed especially for the Master Body Mechanic who prides himself on his equipment and provides him with the 41 Hand Tools most essential for performing expert body and fender repair.

UNIT "O" CONSISTS OF:

8 Pick Tools; 6 Dolly Blocks; 10 Body Hammers; 1 Roughing Out Hammer; 1 Trim Hammer; 1 Lignum Vitae Mallet; 3 Surfacing Spoons; 1 Solder Paddle; 1 Fender Beading Tool; 5 Body and Fender Spoons; 1 Caulking Tool; 1 Adjustable File Holder; 1 File; 1 Pr. Drip Moulding Pliers.



UNIT "P" FENDER AND MINOR BODY REPAIR SET

Unit "P" will meet almost all requirements for fender and minor body repairs. The tools featured here are same high quality as those in larger sets. Many years of excellent service and complete satisfaction are built into this set.

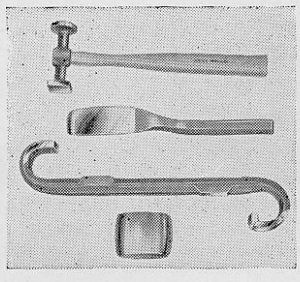
UNIT "P" CONSISTS OF:

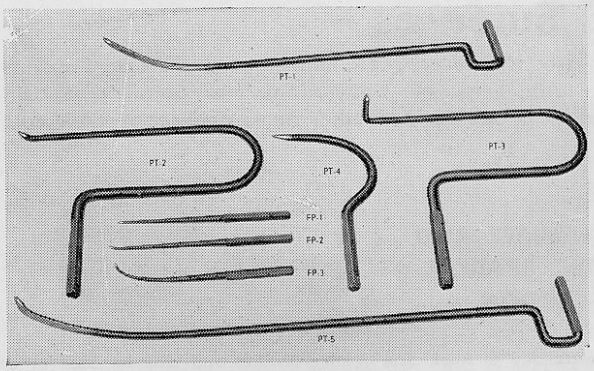
4 Bumping Hammers; 1 Roughing Out Hammer; 4 Dolly Blocks; 1 Adjustable File Holder; 1 Fender Beading Tool; 4 Body Spoons; 1 Solder Paddle; 1 Lignum Vitae Mallet (not shown).

UNIT "R" BEGINNER'S SET

(Illustrated Below)

Unit "R" provides the ideal small set for the shop making only occasional minor fender repairs or for the beginner just learning the business. Usual Porter-Ferguson excellence distinguishes each of the four tools that comprise this set.





UNIT "Q" PICK TOOL SET

For Raising "Low Spots" Behind Inner Construction

Porter-Ferguson patented pick finishing tools are unquestionably the most important development in the body repair tool field in recent years. They have cut finishing time for thousands of mechanics by 20 to 40%. They permit picking up low spots in any part of the body. Indispensable for the skilled mechanic and the shop specializing in efficient, high class work.

NEW PICK TOOLS

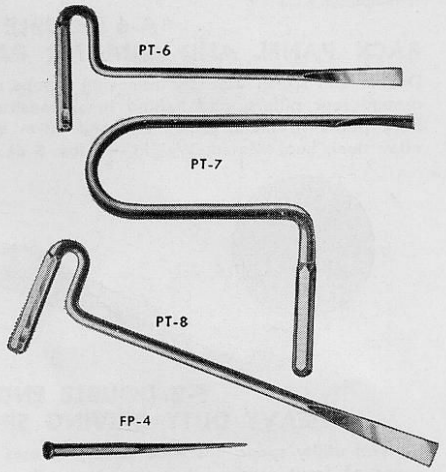
All P. F. Pick Tools are Forged from High Quality Steel and Properly Heat-Treated.

PT-6 SHORT TEE HANDLE CHISEL BIT PICK. Forged from high quality steel and heat-treated. Designed to fit between close inner construction and lift low spots. Weight—1 lb.

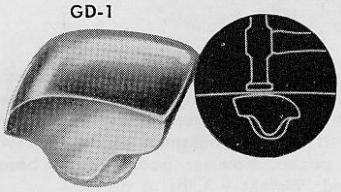
PT-7 DEEP THROAT CHISEL BIT PICK. Designed to fit between close inner construction and lift low spots on new style quarter and door panels. Weight — 3 lbs.

PT-8 LONG TEE HANDLE CHISEL BIT PICK. Designed for heavy duty long reach picking as in new style quarter panels. Weight — 1 lb. 13 oz.

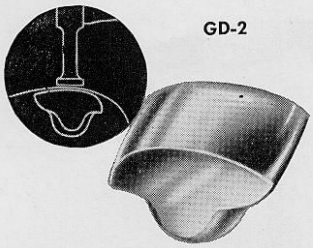
FP-4 PIERCING PUNCH. Forged from high quality steel and heat-treated. Designed to pierce inner construction and pick up low spots. Particularly useful on latest type bodies. Weight — 7 oz.



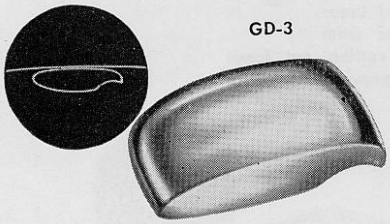
GD-1



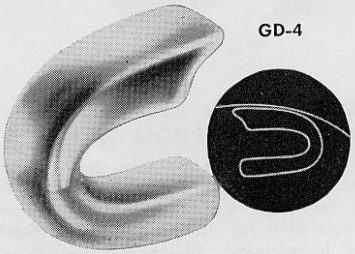
GD-2



GD-3



GD-4



DOLLY BLOCKS

Each of these dollies are the result of careful study and painstaking experimental work. They are made from drop forged alloy steel, heat treated, precision ground, and polished.

GD-1 LOW CROWN GENERAL PURPOSE BUMPING DOLLY. This dolly is ideal for all low crown panels.

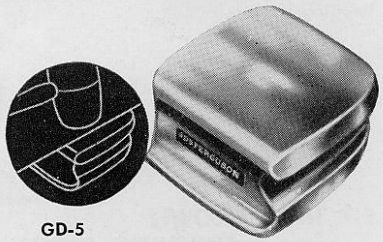
GD-2 HIGH CROWN GENERAL PURPOSE BUMPING DOLLY. For high crown contours such as found on late style fenders, back panels, headlights, radiator shells and hoods.

GD-3 HIGH CROWN DOLLY. Gets into limited space in both rear and front fenders; also high crown parts of radiator shells and recessed fender mouldings.

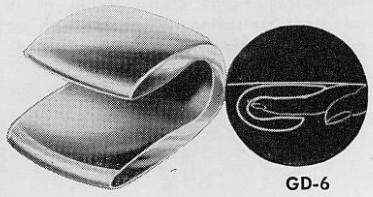
GD-4 HEAVY DUTY ROUGHING DOLLY. Used as a hammer for roughing out shallow dents. Its greater weight furnishes extra backing for heavy rough hammering. Lip at end of face useful for reshaping turned-under flanges.

GD-5 SHRINKING DOLLY. Has nine distinct contour combinations for HOT SHRINKAGE. Also wide and narrow trenching grooves for "setting in" welded seams for paddle soldering. A "must" for every body expert.

GD-6 FINGER DOLLY. Unique shape allows it to be used for bump hammering where inner construction or adjoining metal makes use of the ordinary block difficult.

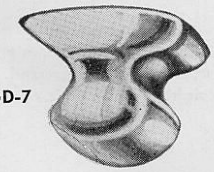


GD-5



GD-6

NEW TOOL

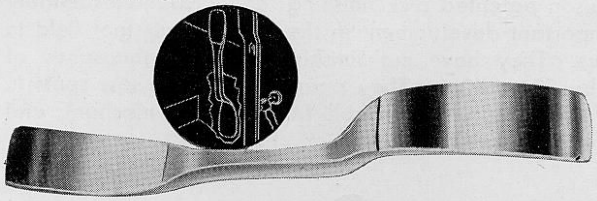


GD-7

GD-7 GENERAL PURPOSE RAIL TYPE DOLLY—A popular all-purpose dolly with many time-saving contours. The most useful all-around dolly block ever produced. Weight—3 lbs. 3 oz.

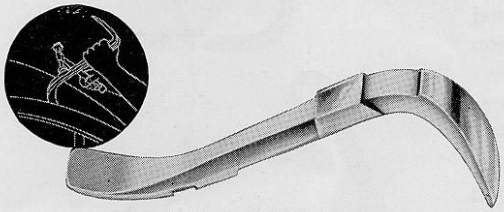
SPOONS—Polished Surfaces

Every skilled body repair man uses a wide selection of these precision ground and polished, heat-treated alloy steel spoons to perform fast, high quality work. In addition to a shop set of these tools, help your body repair men obtain their own set of these outstanding tools. Allow them to order a good selection of these spoons and other items and repay their cost out of earnings.



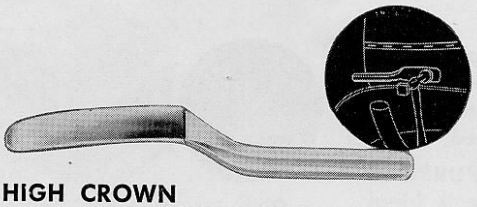
A-6 DOUBLE END LOWER BACK PANEL AND QUARTER PANEL SPOON

Double end spoon used for removing bumps on quarter panels around rear pillars, and behind inner construction and behind back panel strainers, center sills and lower sills. Drop forged, alloy steel, heat-treated. Weight — 4 lbs. 8 oz.



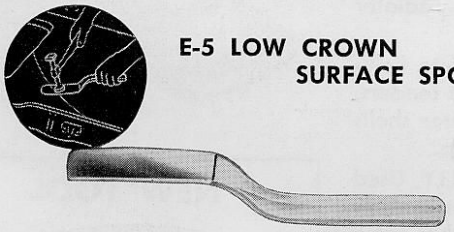
F-2 DOUBLE END HEAVY DUTY DRIVING SPOON

General utility spoon has wide variety of uses for setting inside seams of front fenders, bumping top rail panels, headlamps, hood louvers. For straightening and finishing drip mouldings, caulking quarter panel mouldings and deck panels and general beading work.



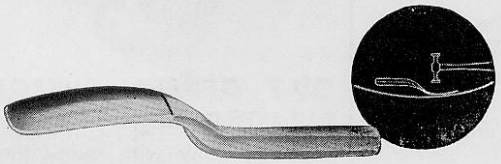
E-7 HIGH CROWN FINISHING SPOON

The extreme high crown radius of this new surfacing spoon adapts it for spring hammering with mallet or bumping hammer on all concave surfaces. Drop-forged from alloy steel, heat-treated. Weight — 1 lb. 6 oz.



E-5 LOW CROWN SURFACE SPOON

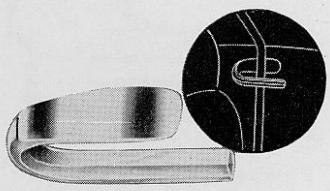
The face of this spoon has a new, low crown radius for use with mallet or bumping hammer when spring hammering low crown surfaces. Precision ground. Drop-forged alloy steel. Heat-treated. Weight — 1 lb. 4 oz.



E-6 SURFACING SPOON

This spoon is used for spring hammering operations with either mallet or bumping hammer and for surface metal finishing. Useful in all type fender repair and on high crown radiuses. Alloy steel, drop-forged, heat treated. Weight — 1 lb. 5 oz.

B-6 FENDER AND COWL BRACKET SPOON



Designed especially to hook over fender bracket and may be used as a dolly, making removal of wheels unnecessary. Also designed to work over cowl strainers and cowl brackets from post to dash and on either high or low crown surfaces. Drop-forged. Weight — 2 lbs. 1 oz.

WC-2 WIDE CAULKING IRON TOOL

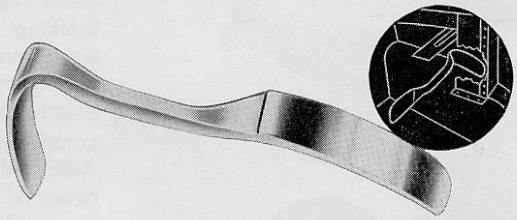
This wide caulking iron was designed to caulk all straight-line surfaces along the center pillar door panels, and beads. Its square face and buffed edges have a 1/64 drop per inch contour. Weight — 1 lb. 3 oz.

F-3 FENDER BEADING TOOL FOR NEW STYLE FENDERS

This specially designed double end heavy duty beading tool is used for straightening all reverse beads on latest style stamped fenders with the no-wire turned under flanged edges. May also be used on return flanges on alligator hoods and for aligning inner construction on body panels. Hammer pads provide base for hammering operations. Drop-forged. Weight — 3 lbs. 6 oz.

D-1 SPECIAL DOOR AND SIDE PANEL TOOL

The unusual length of this spoon together with its shape enables the mechanic to reach in far behind inner construction and remove bumps from doors and trunk lids without cutting out inner construction. Face is precision ground. Weight — 3 lbs. 12 oz.

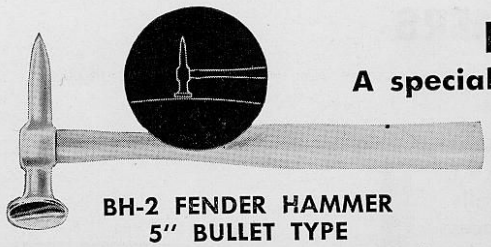


B-3 DOUBLE END ALL-METAL DOOR AND SIDE APRON SPOON

This spoon has been adapted for late style bodies. Both faces are wide and long to reach inaccessible places behind inner construction on doors and quarter panels as well as cowl panel. The precision ground faces fit it for use as a dolly in direct hammering. Drop-forged alloy steel, heat-treated. Weight — 3 lbs. 7 oz.

HAMMERS

A special Type for Every Need



BH-2 FENDER HAMMER 5" BULLET TYPE

A short pick hammer for use on high crown fenders. Has full machined 1 9/16" round face with bullet type straight pick end. For use also in all industrial metal finishing and general ding work. Overall length of head 5 1/8".

BH-3 SHORT SHANK ROUND AND SQUARE FACE BUMPING HAMMER

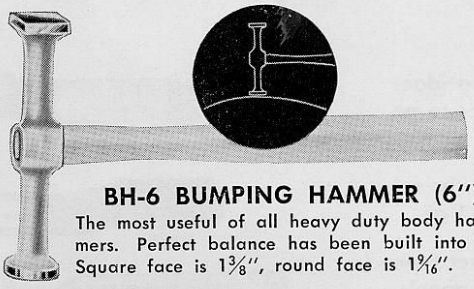
Designed to hammer between bumper bar and fender or in any similar confined space without removing bumper or other adjoining metal. Overall length of head 2 1/2".

BH-4 BUMPING HAMMER (4")

Has 1 3/8" square face and 1 9/16" round face. Illustration shows typical use of hammer in metal bumping. A basic body tool.

BH-5 SQUARE FACE & TAPER SHANK BEAD AND MOLDING HAMMER

For reshaping all beads, moldings, headlamp inset reveals and louvers. Wide chisel face for rapid pick surfacing in large areas.



BH-6 BUMPING HAMMER (6")

The most useful of all heavy duty body hammers. Perfect balance has been built into it. Square face is 1 3/8", round face is 1 9/16".

BH-7 ROUND FACE & POINTED SHANK PICK & SURFACING HAMMER

The pointed shank of this hammer is curved for better striking balance and to permit reaching behind inner construction. Also used for picking through sound insulation in body panels.

BH-8 COMBINATION OFFSET SQUARE FACE AND CROSS PEEN BUMPING HAMMER

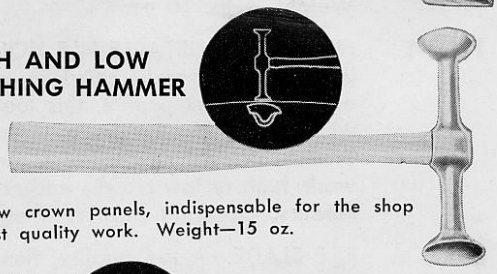
Offset square face affords clearance without danger of striking adjoining panels. High crown cross peen face is for deep and narrow panels and return contours.

BH-9 COMBINATION OFFSET CROSS AND STRAIGHT PEEN HAMMER

For all narrow concave surfaces. Cross peen high crown face is for side concave surfaces. Offset shank enables the user to work close to beads or seams.

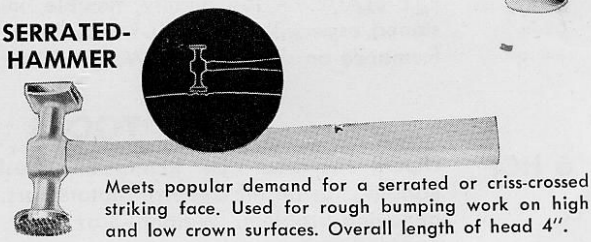
RH-10 SPECIAL ROUGHING OUT HAMMER

A perfectly balanced heavy-duty roughing out hammer. Curved shank reaches places not accessible to hammers of ordinary design, especially useful for roughing out high crown surfaces. Round face ideal for bumping extra heavy gauge metal.



BH-11 HIGH AND LOW CROWN FINISHING HAMMER

Round faces are 1 9/16" and 1 11/16" in diameter. For fine finish hammering both high and low crown panels, indispensable for the shop specializing in best quality work. Weight—15 oz.

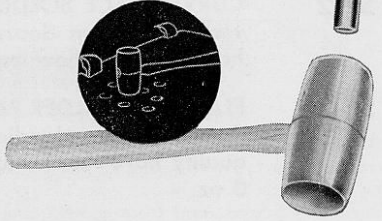


BH-12 SERRATED-FACE HAMMER

Meets popular demand for a serrated or criss-crossed striking face. Used for rough bumping work on high and low crown surfaces. Overall length of head 4".

MH-1 MAGNETIC TRIM HAMMER

For removing and replacing trim and upholstery. 6" head has magnetized face for picking up and driving trim tacks and brads. Handy forged claw for removing tacks. Overall length 11".

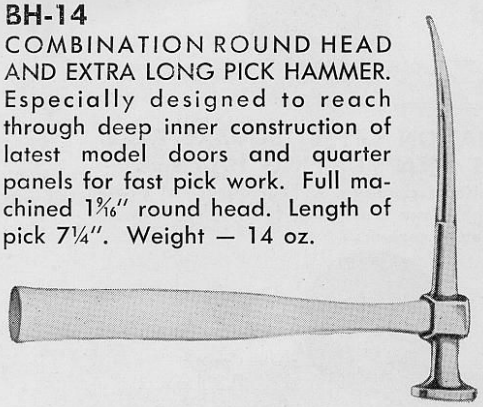


WM-5 LIGNUM VITAE BUMPING MALLET

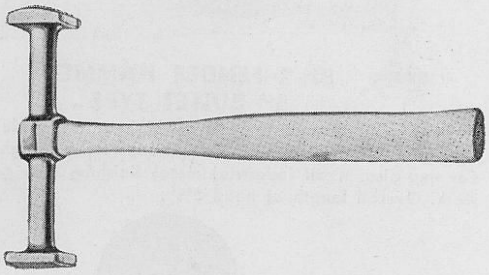
For use in connection with hot metal shrinkage and for working on painted surfaces. Very durable and will not chip under ordinary usage.

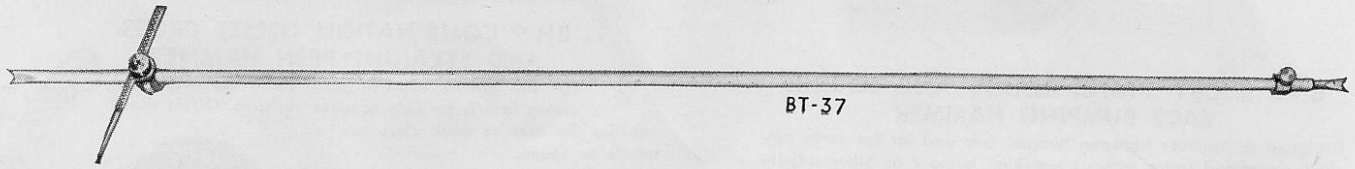
TWO NEW HAMMERS

BH-14
COMBINATION ROUND HEAD AND EXTRA LONG PICK HAMMER. Especially designed to reach through deep inner construction of latest model doors and quarter panels for fast pick work. Full machined 1 5/16" round head. Length of pick 7¼". Weight — 14 oz.



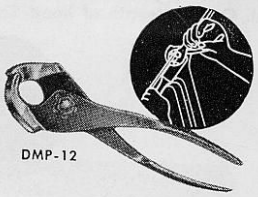
BH-13
COMBINATION CROSS AND STRAIGHT PEEN HEAVY DUTY HAMMER. Especially designed for concave surfaces on doors, quarter panels, hoods and trunk lids. Drop-forged of high quality steel with full machined and polished square faces. Weight — 1 lb. 1 oz.





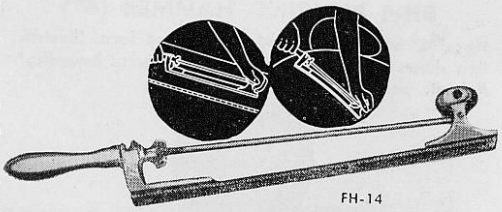
BT-37

BT-37 BODY TRAM CHECKING GAUGE WITH SCRIBE. Necessary for internal body measurement and diagonal or cross checking. Precision made from high grade steels with hardened wearing surfaces, telescoping adjustment to any length from 44" to 84"; may be firmly locked at length desired. Equipped with a sliding and locking scribing device. Weight—2 lbs. 10 oz.



DMP-12

DMP-12 DRIP MOLDING PLIERS. Indispensable for pulling out crushed drip molding. Accurately formed working faces permit extremely rapid roughing-out for finishing with suitable spoon. Drop-forged. Weight—1 lb. 10 oz.



FH-14

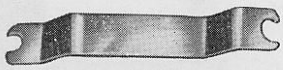
FH-14 FLEXIBLE ADJUSTABLE FILE HOLDER. Light weight with aluminum brackets and handle. Quickly adjusted from extreme concave to extreme convex profile, this tool has maximum utility for filing a wide variety of contours: round and oval corners, upper and lower bracket panels, cowls, hoods and top rail panels. Used for flat work, high or low crowns and on sweep surfaces. Files right up to corners. Does not chatter. Weight (with file) 1 lb. 7 oz.

U-14

U-14 FILE BLADE. A top quality, flexible, milled curved-tooth file. Designed especially to fit FH-14 file holder and give maximum performance on sheet metal. Weight 11 oz.

NEW TOOLS

6 HCT DOOR HANDLE CLIP REMOVER. Designed for removing door handle clips on all General Motors cars. The perfect answer to an annoying problem. Weight—3 oz.



6 HCT

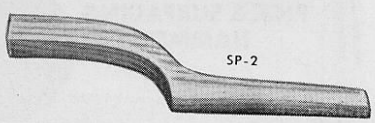
6 HPT DOOR HANDLE PIN REMOVING TOOL. For fast and easy removal of door handle pins on all makes of cars. Weight--4 oz.

6 HPT

SMC-10 SHEET METAL CUTTER. A new and extremely useful impact type cutter for removing construction, patching and replacing panels. Will follow any outline in soft steel sheets up to 16 gauge. Precision-made of high quality, heat-treated steel. Weight—1 lb. 4 oz.

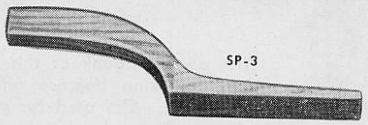
SMC-10

SP-2 CURVED FACE SOLDER PADDLE. Special design for soldering reverse curves on doors, hoods, trunk lids. Made of best quality hard maple; tallow impregnated for longer life. Weight—3 oz.



SP-2

SP-3 FLAT FACE SOLDER PADDLE. Used for soldering all surfaces other than concave. Handle designed for easy control. Made of best quality hard maple; tallow impregnated for longer life. Weight—3 oz.

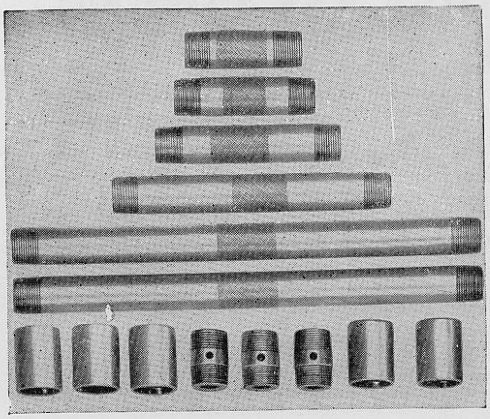


SP-3

UNIT "S" FRAME TOOLS

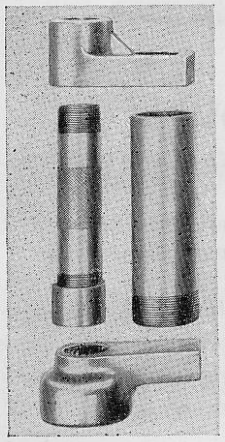
For Straightening Automobile Frames and Bodies

UNIT S is made up of all the items shown on this page. They are designed for general frame repairs and various pulling operations required in body repair work. The BU-500 push-pull jack, large and small rubber heads and the BU-580 base are the same units illustrated and described on previous pages. Each of the other attachments has been developed for a specific frame or body repair purpose.



UNIT-T TUBING SET

This Tubing Set is of extra-heavy construction, with 3/8" walls, so that there can be no doubt as to its capacity to withstand the tremendous pressures necessary for frame work. It is made of seamless steel, full machine threaded and chamfered for speedy assembling. The nipples have holes along the sides for tightening.



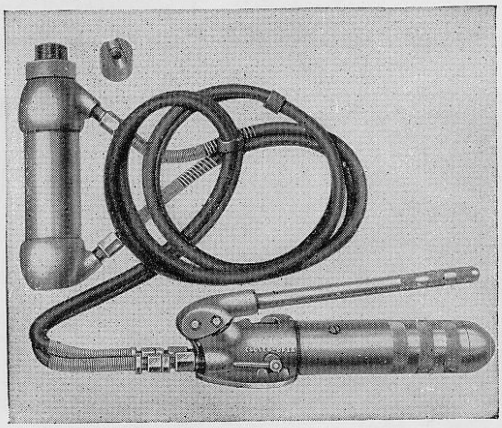
PUSH-PULL ATTACHMENTS BU-900

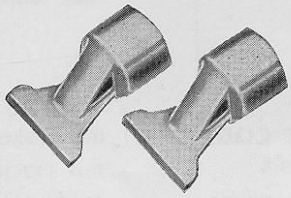
This group of Frame Tools was developed especially to meet the need for tools that could be used in extremely close quarters, such as between the bottom rocker panel and frame, or between the Y sections of the frame. Full utilization of hydraulic power is made possible through exceptionally heavy construction in each detail. Full machine threads are chamfered.

REMOTE CONTROL PUSH-PULL JACK BU-500

Although providing the maximum power usually required for frame work, this rugged Porter ★ Ferguson Hydro-Method Jack is remarkably compact, due in part to its being of the Remote Control type and in part to its revolutionary internal construction. Affording both push or pull and operating in any position from horizontal to upside-down, this rapid-action Jack also features a Self-retracting ram. A new, larger valve lever, which is easily manipulated, gives micro-control at all times, enabling the operator to stop the Jack at any point and hold it there, or to instantly reverse its direction. This Porter ★ Ferguson Hydro-Method Jack truly represents the last word in hydraulic engineering.

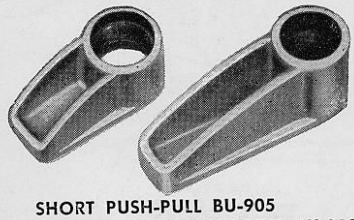
Capacity 12½ Ton.





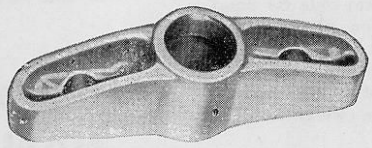
OFFSET SPREADING TOOLS BU-907

Designed for spreading in body and frame, etc.



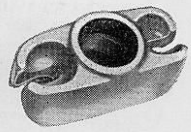
SHORT PUSH-PULL BU-905
LONG PUSH-PULL BU-912

Attached to the Jack or Extension Tubing, these tools are used for pushing or pulling the damaged body or frame back into alignment.



LARGE CHAIN ATTACHMENT BU-909

Like the Small Chain Attachment shown below, this tool is used with the Jack and Chain for push or pull operations across the frame.



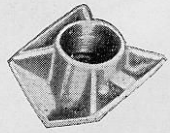
SMALL CHAIN ATTACHMENT BU-910

Attached to the Jack, this tool provides the means for fastening the Chain to the Jack in push or pull operations as across the frame.

HEAVY DUTY V-NOTCH BU-913

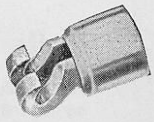
The Heavy Duty V-Notch is used as a jack base for holding the Jack in position when pushing damaged front or rear cross member into alignment.

BU-575
Ram Cap



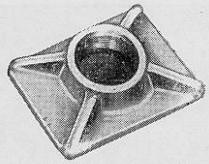
V-BLOCK BU-906

The V-Block is used in conjunction wiht hydraulic power for pushing into alignment those parts of the frame where two members come together to form a sharp corner.



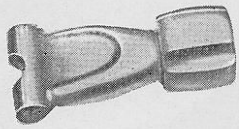
SWIVEL CHAIN HOOK BU-919

The Swivel Chain Hook is used for attaching the Chain to the Jack or Tubing for pushing or pulling on diagonal or short frame operations.



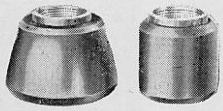
JACK BASE BU-580

This is the standard Jack Base and is used in all operations where a special base or other attachment is not required.



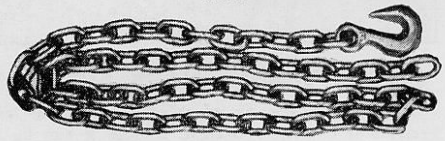
BUMPER STRAIGHTENER ATTACHMENT BU-908

This attachment is used in connection with the hydraulic Jack for straightening the bumper while attached to the car. May also be used in our Unit K Shop Press.



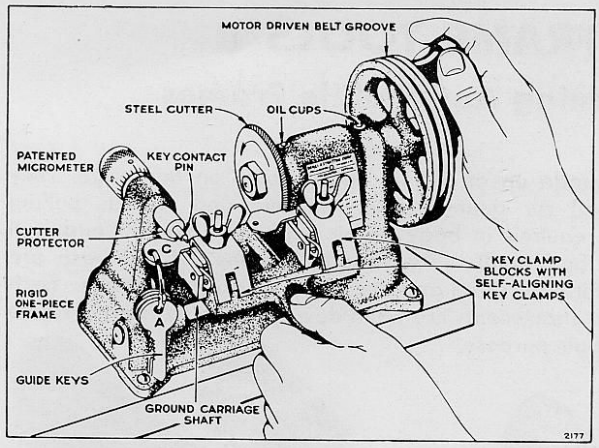
RUBBER BASES BU-700 BU-705

The two sizes answer every need for a Rubber Base. Resilient yet firm, these bases will never slip nor mar the surface. Impervious to oils and greases. Rubber is vulcanized to standard 1¼" metal core.



HEAVY DUTY CHAIN BU-911

This 6 foot chain is made especially for frame work and is of exceptional strength.



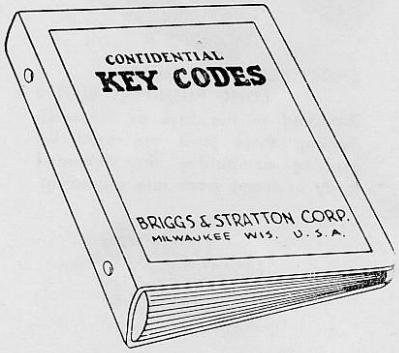
AUTOMOTIVE KEY CUTTING MACHINE

MTB-80774 For All Automotive Keys

Immediate, accurate key service is an added "plus" service that can do much to build good will among your service customers. To make key service profitable, accurate, easy to use equipment is essential. This machine is both accurate and easy to use — it is designed and built by a leading original lock manufacturer for use in automotive service shops.

DUPLICATES OR CUTS FROM CODE

Most key service requires duplication of present keys from the broken or damaged original. Duplication is simple with this machine — the original is clamped in left hand jig. By holding the original key against the guide anvil, the new blank is automatically cut to the correct shape. Cutting keys from code is almost as simple by following the instructions in the key code manual supplied with each machine.



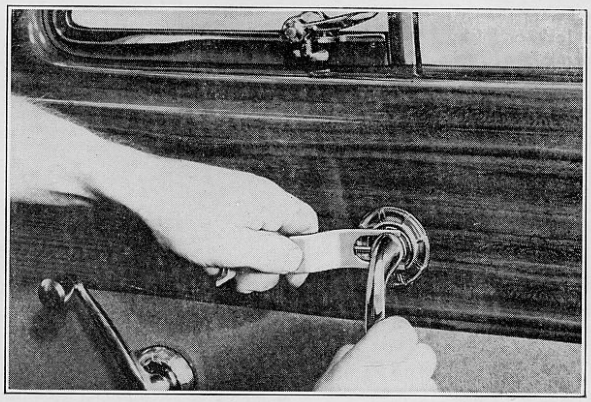
COMPLETE CODE SERVICE

A manual of confidential key codes is supplied with each machine. Its use makes it easy to check the correct key code for doors, ignition, glove compartment, trunk, etc. All codes are carefully indexed for prompt, accurate reference.

DOOR AND WINDOW HANDLE LOCK PIN REMOVER

C-533 For all 1947, '48, '49, '50, and 1951 Kaiser and Frazer cars. Also all 1951 Henry "J" models.

You don't have to waste time hunting for the proper size punch when you have this inexpensive tool available. Tapered jaws of tool press the flange away from door panel and hardened pin drives handle lock pin out of handle shaft.

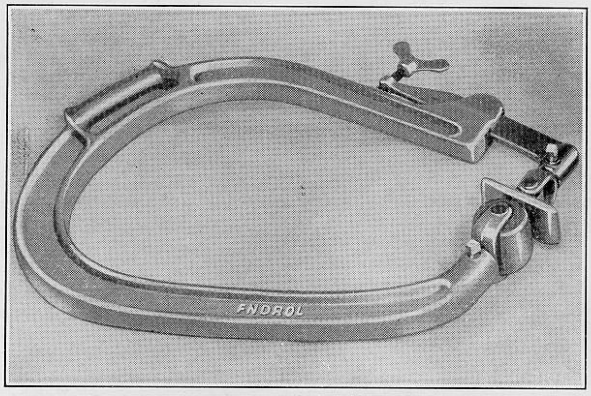


"FNDROL" FENDER IRON

C-879 For All Cars and Trucks

Rolls Dents From All Kinds of Fenders

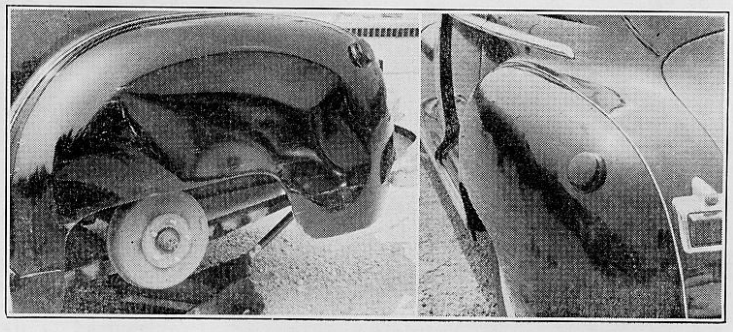
The hardened steel roller fits under the fender and the flat iron portion on top. By pushing the tool back and forth over the damaged portion of the fender it can be restored to its original smooth contour.



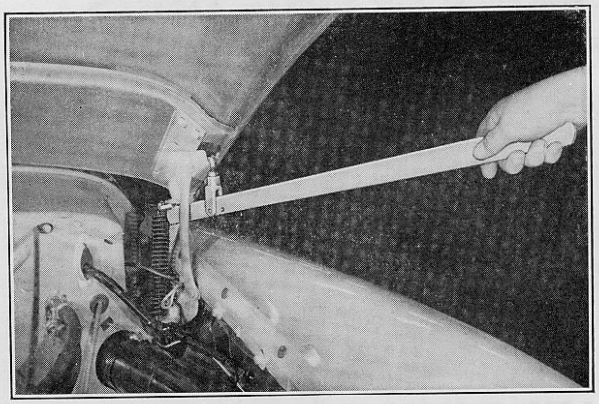
HAND TOOL — USES NO POWER

There are no air or electrical connections required—because it is easy and quiet to use, it can be operated by a used car porter without removing the used car from the lot. Top of fender is lubricated with any type cup grease or engine oil to protect finish and make tool easy to operate.

UNRETOUCHED PICTURES OF A DAMAGED FENDER BEFORE AND AFTER USING "FNDROL"



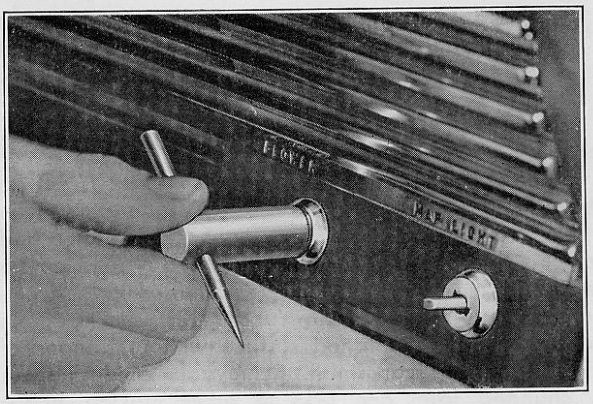
BEFORE AFTER



HOOD HINGE SPRING REMOVER AND REPLACER

KF-33 For 1947, '48, '49, and 1950 Kaiser and Frazer cars.

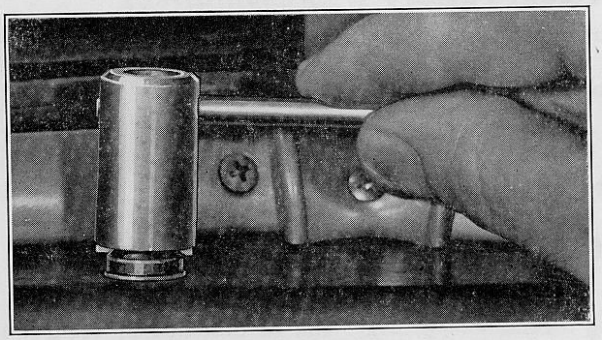
Release of the hood hinge springs will often speed up the process of realigning a damaged or poorly fitting hood. The anchor hook safely and conveniently hooks into upper hinge bracket to provide ample leverage for removing or installing hood hinge spring. For later models with coil type springs use tool C-875 illustrated below.



INSTRUMENT PANEL BEZEL NUT WRENCH

KF-42 For all 1947, '48, '49, '50, and 1951 Kaiser and Frazer cars. Also all 1951 Henry "J" models.

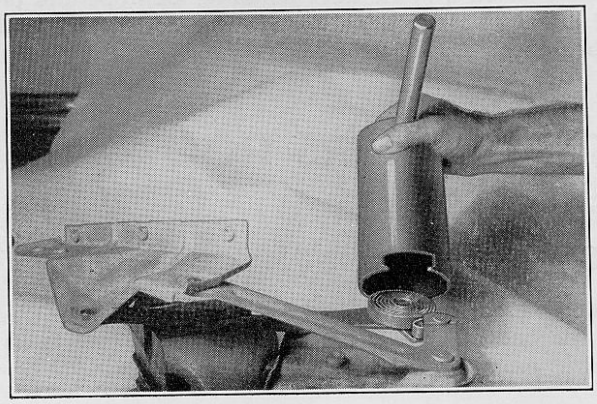
This is a dual purpose wrench — lugs engage slots in bezel nut while pointed end of handle provides safe, convenient means of compressing lock spring in knob. Guard against marring the polished finish of these decorative nuts by equipping your shop with several of these inexpensive wrenches.



WINDSHIELD WIPER CONTROL NUT WRENCH

KF-43 For all 1947, '48, '49, and 1950 Kaiser and Frazer cars.

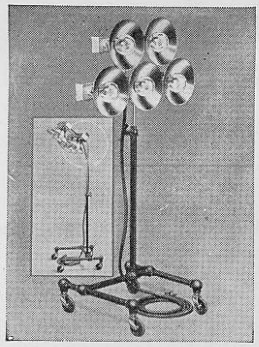
Attempting to remove these decorative lock nuts with a screwdriver or punch is sure to cause disfiguring scratches and other mutilation of your customer's car. Equip your shop with several of these inexpensive wrenches and be sure they are used. You'll save time and turn out a better service job which means increased profit and customer good-will.



HOOD HINGE SPRING REMOVING AND INSTALLING TOOL

C-875 For 1951 Kaiser cars. (Supersedes KF-112 Wrench. C-875 Wrench fits all springs serviced by KF-112 plus similar springs on some other popular makes of cars.)

Safety and the ease with which it saves time in servicing this heavy counterbalancing spring are reasons enough why all dealers will want to be sure their shops have this special tool. Deep slot retains spring easily — long handle provides ample leverage.



INFRA-RED RAY PAINT DRYING UNITS

C-817 Five light Unit with 7⅝" polished Aluminum reflectors and 5—250 watt G-25 lamps.

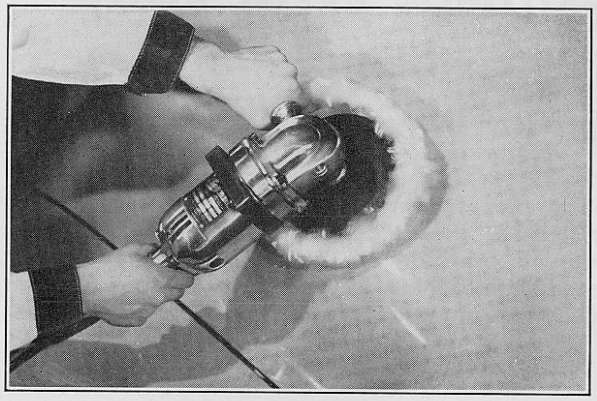
C-818 Five light Unit with 10¼" polished Aluminum reflectors and 5—250 watt PS-30 lamps.

C-819 Thirteen light Unit with 7⅝" polished Aluminum reflectors and 13—250 watt G-25 lamps.

C-820 Infra-Red Ray Lamp only, 250 watt, 110 volt, 3¾" dia. x 7¾" overall. (PS-30).

C-821 Infra-Red Ray Lamp only, 250 watt, 110 volt, 3⅛" dia. x 5⅛" overall. (G-25).

Portable drying units like these will save hours of time and help produce quality touch-up and spot refinishing.



HEAVY DUTY POLISHER AND BUFFER

MT-270 Supplied complete with special rubber back-up pad and sheepskin buffer pad. Powered with 110 Volt, 0 to 60 Cycle, 1250 R.P.M., 5 Amp. universal motor.

Proper and satisfactory results from some of the better car polishes requires the use of a heavy-duty power polisher like this to burnish the polish to a hard long-lasting finish. The special flexible type back-up pad and sheepskin buffer pad were developed especially for this polisher to burnish the polish in accordance with the polish manufacturer's recommendations. Special non-marring rubber rest block allows buffer to be rested on polished surface without danger of scratching or marring car finish. Removable guide handle may be changed from one side to other making buffer adaptable to both left and right hand operators.

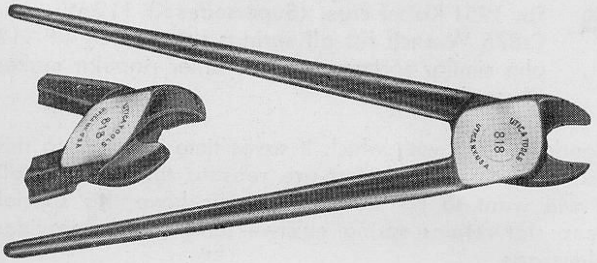
This Is the Same Buffer As Used By Lustur-Seal Factory Representatives

The makers of Lustur-Seal have tested this buffer and approved it enthusiastically. You may be sure it will give you excellent service in your Lustur-Seal Department.

FLOCK SPRAY GUN

C-3000 Capacity 2 quarts — extra glass container available separately.

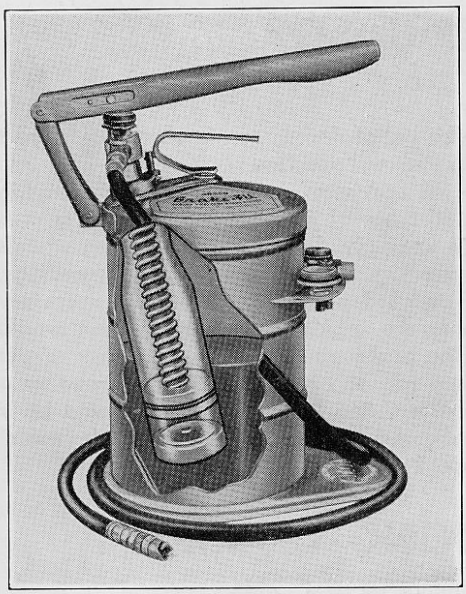
Amazing reconditioning results can be obtained by using this special gun to flock used car trunks, carpets, glove boxes, etc. Gun efficiently and uniformly applies short—fine—long or coarse flock fibers without clogging, yet with sufficient velocity to firmly imbed it in the flock adhesive. Gun operates on only 35 lbs. air pressure. Ideal for use with car factory used car appearance reconditioning kits.



BODY TRIMMERS HOG RING PLIERS

C-3036 For small hog rings

Installation of seat covers and replacement seat trim can be greatly speeded up through the use of these special pliers. Closes right prong over left prong.

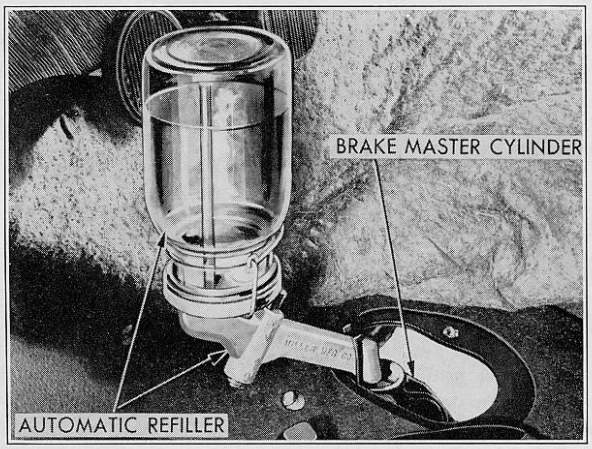


BRAKE-FIL BLEEDER TANK

Uses No Air to PRESSURE Bleed Hydraulic Brake Systems

C-837 2½ Gallon Unit Complete with Hose and Fittings.

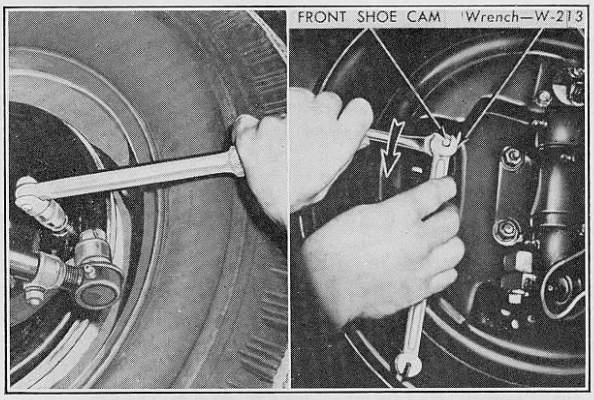
This tank, which is fitted with a self-contained spring actuated piston, provides ample pressure to bleed all types of hydraulic brake systems without the use of compressed air. This avoids possibility of air mixing with the hydraulic fluid and entering the automotive brake system. Unit provides one-man portable brake bleeder service in the shop, on the used car lot or for road service. Easily read pressure gauge on top unit indicates tank pressure.



AUTOMATIC REFILLER FOR MASTER BRAKE CYLINDERS

C-362 Complete with 2 adapters for all cars and trucks.

An automatic refiller like this avoids the familiar but costly error of accidentally putting engine oil in the master cylinder in place of brake fluid. There's no chance for such an unfortunate error when you use this refiller — nor will it overflow the master cylinder or let it run dry and require additional bleeding of the entire brake system. Saves time — saves brake fluid — works automatically — order several for your shop.



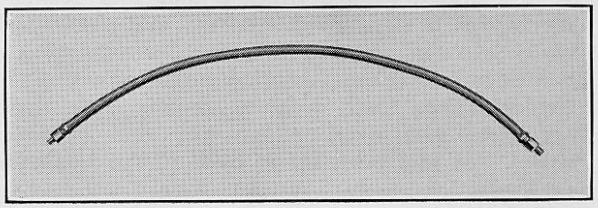
KF-16 Socket W-213 Wrench

BRAKE CAM ADJUSTING WRENCHES

KF-16 For 1947 and 1948 Kaiser and Frazer cars. Also all 1951 Henry "J" models.

W-213 For all 1949, '50, '51, and late model 1948 Kaiser and Frazer cars.

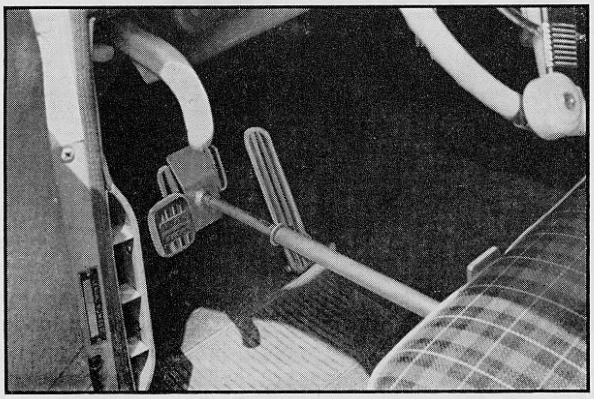
The KF-16 socket-type wrench is shown in the left-hand portion of the illustration. Wrench W-213 used on all later Kaiser and Frazer cars is shown in use in the right-hand portion of illustration. Be sure your brake mechanics are equipped with these simple wrenches — they'll turn out more work and not round-off brake adjusting cams.



BRAKE BLEEDER HOSE

C-650 For All Models

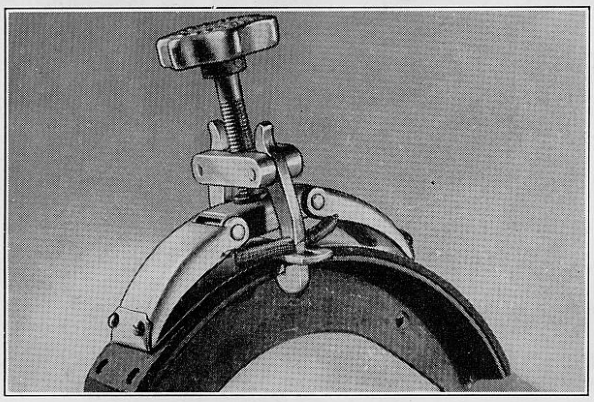
This hose is fitted with two different sizes of threaded adapters to fit various sizes of bleeder screw openings. Used with any standard glass jar as recommended in factory service manual.



PEDAL DEPRESSOR

C-866 For All Cars.

This easy to use brake pedal depressor fits all makes of cars and is essential for taking accurate caster and king pin inclination readings. In order to obtain king pin inclination readings, with most all types of wheel alignment gauges, it is absolutely necessary to apply the brake so that the wheels will not rotate when turning them to take the gauge readings. Without the brake pedal depressor, it would be necessary for someone to apply the brake while another man would take the readings. The brake pedal depressor is easy to put in place and makes a job of king pin inclination reading a one man operation. The C-866 Pedal Depressor should be a part of your wheel alignment equipment. It can also be useful in your Brake Service Department.

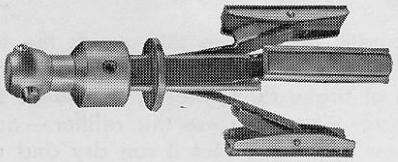


BRAKE LINING CLAMPS

C-557 For all linings up to 3" wide.

C-558 For all linings from 3" to 6½" wide.

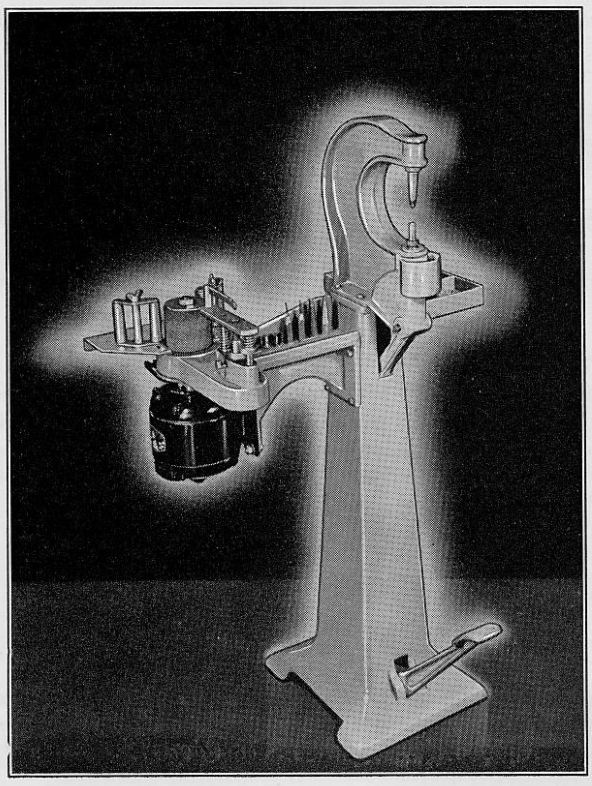
Avoid looseness between the brake shoe and brake lining, when new lining is riveted in place, by using one of these clamps. Clamp snaps over edge of shoe and positive screw pressure holds lining tight. Clamp can be worked along lining to allow fast progressive riveting.



BRAKE CYLINDER SURFACING HONE

C-3080 Capacity ¾" dia. to 1½" dia.

Surface corrosion can be easily and quickly removed with this hone from master and wheel cylinders that might otherwise have to be discarded. Restores cylinder bore to bright, "like new" finish. Cylinder bores should not be honed more than .002" oversize. Use with any standard ¼" drill.



BRAKE LINING RIVETER

C-562 Complete with standard set of punches and drills with carboloy tipped countersinks. Powered with 60 cycle A.C. motor.

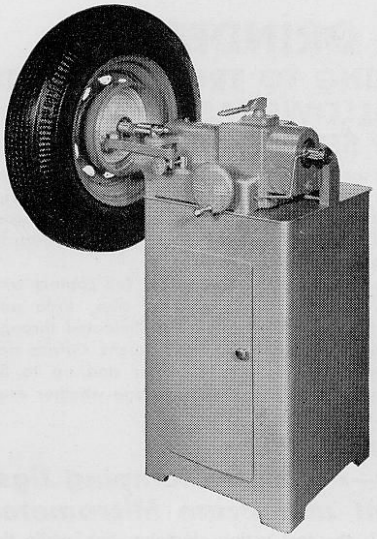
EQUIPPED WITH CARBOLOY TIPPED TOOLS

Value plus is featured in this rugged machine especially designed for car dealers, brake service shops and independent service departments. Countersinks are all carboloy tipped to provide long, efficient service.

RIVETS CLUTCH AND PARKING BRAKE FACINGS

In addition to knocking out old rivets, drilling and countersinking either woven or hard molded linings, and riveting all types of wheel brake linings, it also is used for riveting new clutch disc facings and relining parking brake bands.

Semi-automatic rivet feed properly centers new rivet. Supplied complete with rivet holding tray and clean-up grinding wheel. See tool parts list in back of this book for replacement tools.



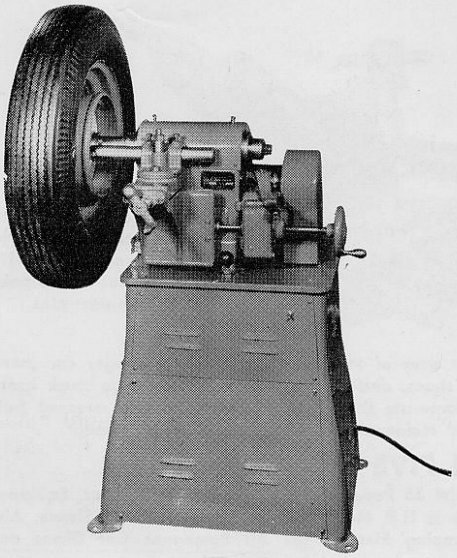
PORTABLE, LOW-COST, DRUM LATHE

MT-358 Capacity 8" to 14" Dia. x 5½" deep.

This is an ideal, low-cost brake drum lathe that will meet the needs of most all small shops. It will retrue approximately 95% of all passenger car and light truck brake drums. Spindle feeds drum across cutter at the rate of .005" per revolution. Equipped with cone clutch, automatic shutoff and fast hand feed. Available without cabinet for bench use.

SPECIFICATIONS

Capacity—8" to 14" dia. x 5½"
Spindle Feed—72 to 144 R.P.M.
Spindle Drive—Worm and Gear from pulleys
Feed—Hand and automatic through friction clutch and gears
Motor—1/3 H.P., 1725 R.P.M., 110/220 Volts, 50/60 cycle.
Size—26" x 22½" x 42" high
Standard Equipment—Cones, adapters, spacers, tools and tool bit for car drums



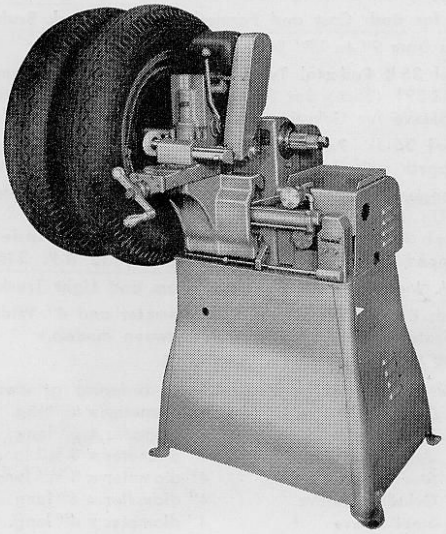
MULTI-PURPOSE BRAKE DRUM LATHE

MT-359 Capacity up to 17¼" dia. x 5½" deep.

Medium size shops will find this lathe well designed to meet their needs. It is a heavy-duty rugged lathe for servicing all sizes of passenger car and light truck brake drums. HG-1030 attachment will increase its capacity to turn dual wheels from trucks up to 1½ ton capacity. Grinder attachment also available. Carriage moves on hand-scraped dovetail ways equipped with adjustable gibs. This lathe has micrometer cross feed, heavy, adjustable tool bar and compound hand and automatic feeds.

SPECIFICATIONS

Capacity—17¼" Max. Dia. x 5½" deep
Spindle Feed—49, 92 and 163 R.P.M.
Spindle Drive—Sprockets through pulley
Feed—Friction clutch and gears
Motor—½ H.P., 1725 R.P.M. High torque, 110/220 Volts, 50/60 cycle 1 phase. Also available 220/440 Volt, 3 phase
Size—26" x 32" x 40" high
Weight—420 lbs. (shipping)
Standard Equipment — Adapters, cones, spacers, tools and tool bit for car drums



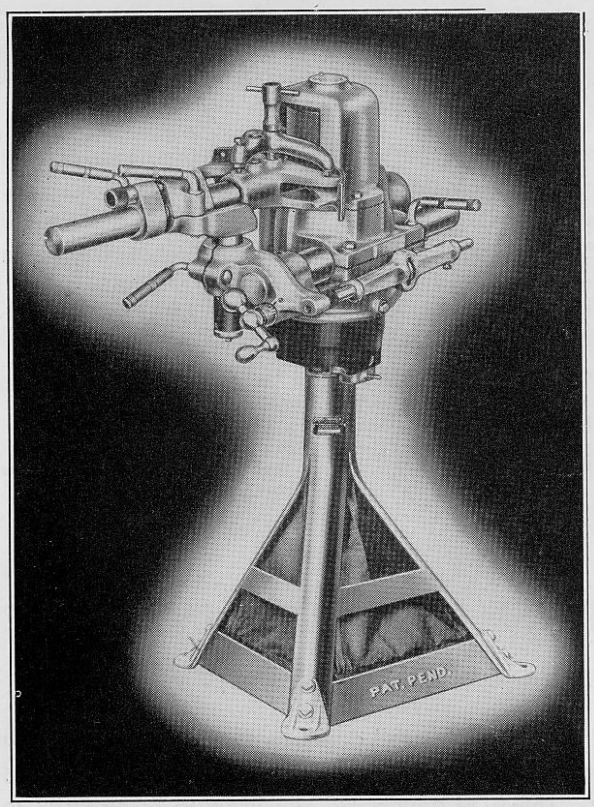
HEAVY-DUTY, HYDRAULIC FEED, DRUM LATHE

MT-360 Capacity 8" to 24" dia. x 9" deep.

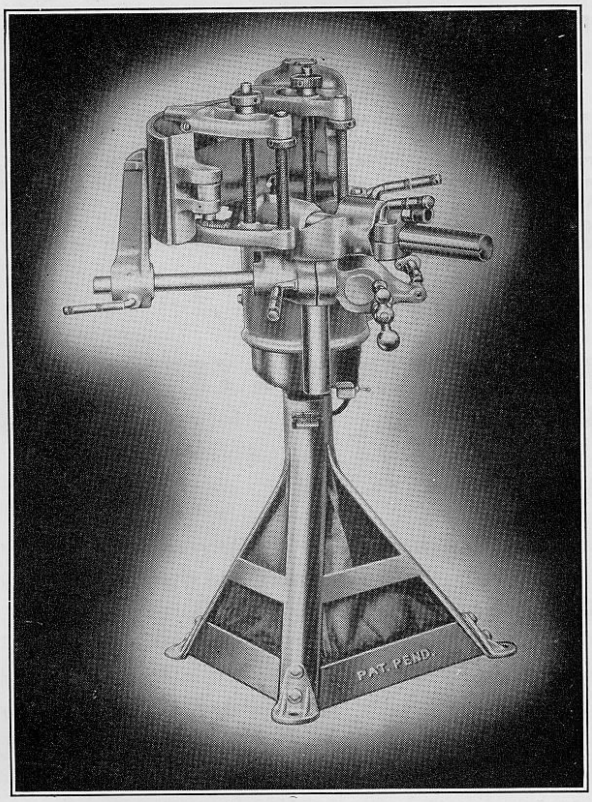
The hydraulic feed of this machine provides an infinitely variable cut that makes this heavy-duty lathe popular with mechanics and a real profit producer for its owner. Close control of the cut to .001" produces a fine finish, eliminating the need of grinding. A grinding attachment, however, is available for refinishing hardened drums. Spindle is mounted in Timken tapered bearings allowing production speeds with long life and simplified maintenance.

SPECIFICATIONS

Capacity—8" to 24" dia. x 9" deep
Spindle Feed—44, 80, 133, 160 R.P.M.
Spindle Drive—Worm and gear from pulleys
Feed—Hydraulic 0" to .060"
Pump Motor—1/6 H.P., 110/220 volt, 60 cycle, single phase
Motor—½ H.P., 1725 R.P.M., 110/220 or 220/440 Volt, 3 phase
Size—30" x 27½" x 42" high
Weight—650 lbs. (shipping)
Standard Equipment—Arbors, cones, adapters, tools and tool bit for cars and trucks.



The MT-294 Pedestal Type Brake Shoe Grinder is illustrated above. It is ideal for shops primarily servicing passenger cars and light trucks. The MT-293 Grinder is similar but equipped with a lighter motor.



This illustration shows the MT-291 Grinder servicing a cast type brake shoe. This machine is recommended to dealers and fleet owners for servicing passenger cars and trucks with linings up to 6" wide. The MT-292 grinder is the same but equipped with an 8" wide grinding sleeve. The MT-290 model is the same as MT-291 but is not equipped to service cast type brake shoes.

BRAKE SHOE GRINDERS

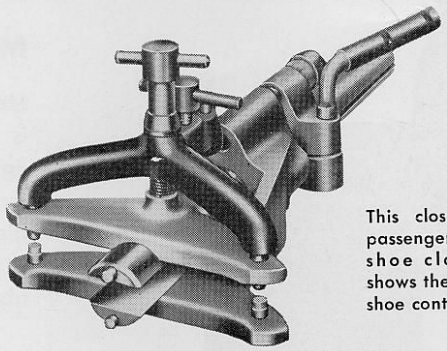
GRINDS BRAKE LINING TO TRUE, ACCURATE FIT WITH DRUM—ALLOWS FAST, CLEAN PRODUCTION TYPE SERVICE

These are the same machines as used by some of the largest car manufacturers' brake design and service engineering departments to perfect quiet brakes of highest efficiency. If your service department has difficulty reconditioning passenger car or truck brakes to original quiet, efficient standards, you need one of these dependable, easy-to-use grinders.

Speedily grinds all types of brake shoe lining to accurate, full contact with the brake drum. Many serious cases of brake squeak, dive, fade and inefficient operation have been quickly and permanently eliminated through the use of these machines and accurate brake shoe adjustment. Grinds any over or undersize required—From 9" to 19" in diameter and up to 8" wide linings. These machines grind all size shoes within range whether even drum diameter or odd fractions.

All Models of These Grinders Are Equipped With Fast—Accurate Clamping Jigs, Vacuum Attachment and Drum Micrometer

The "heart" of these machines is the fast acting clamping jigs, while the vacuum attachment which is standard equipment on each model, sucks away all lining dust and keeps both the operator and the shop clean. The drum micrometer is also included with each machine, it is essential for grinding linings to the exact standard or undersize drum size within 1/1000 inch.



This close-up of the passenger car brake shoe clamping jig shows the vital 6 point shoe contact pins.

There are two different sizes of these jigs — one for passenger car shoes, and formed type truck shoes, and another for large cast type truck brake shoes. They are all so accurate that a ground shoe may be removed from the jig, turned over and reclamped in exactly the same alignment.

AVAILABLE IN FIVE MODELS

MT-290 Model 35 Pedestal Type Brake Shoe Grinder. Equipped with ½ H.P. Motor and 6" Wide Grinding Sleeve, Also Clamping Fixtures for All Passenger Car Shoes and Formed Type Truck Brake Shoes. Grinds Brake Shoes from 9" to 19" Diameter x 6" Wide.

MT-291 Model 35-A Pedestal Type Brake Shoe Grinder. Equipped with ½ H.P. Motor and 6" wide grinding sleeve, and Clamping Fixtures for All Passenger Cars. Also for Both Cast and Formed Types of Truck Brake Shoes from 9" to 19" Diameter x 6" wide.

MT-292 Model 35-B Pedestal Type Brake Shoe Grinder. Same as MT-291 (35-A) But Equipped with 8" Wide Grinding Sleeve for Grinding Brake Shoes Up To 8" Wide.

MT-293 Model 35-Jr. Pedestal Type Brake Shoe Grinder. Equipped with 1/3 H.P. 1750 R.P.M. Motor. For All Passenger Car Brake Shoes From 9" to 18" Diameter and Up to 4" Wide.

MT-294 Model 35-D Pedestal Type Brake Shoe Grinder. Equipped with High-Speed, Heavy-Duty ½ H.P. 3450 R.P.M. Motor for All Passenger Cars and Light Trucks. Grinds Brake Shoes Up to 18" Diameter and 4" Wide.

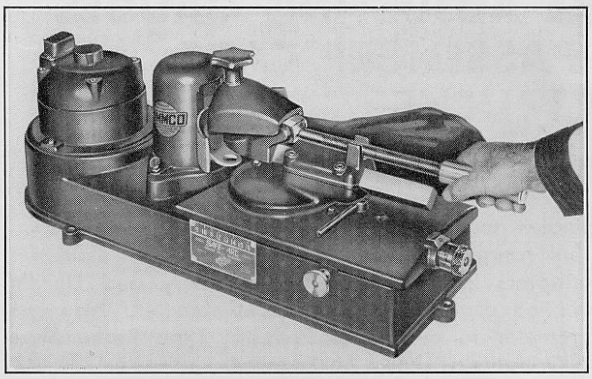
(Underlined portion indicates principal differences between models.)

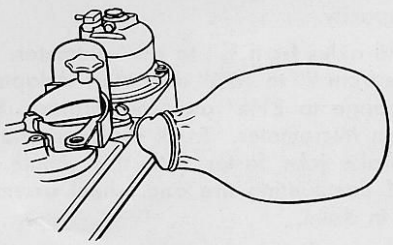
EXTRA GRINDING SLEEVES

We suggest ordering six extra grinding sleeves when ordering grinders.

MT-290-44	Grinding Sleeve	4" diameter x 6" long.
MT-290-44A	Steel Sleeve	4" diameter x 6" long.
MT-292-44D	Grinding Sleeve	4" diameter x 8-¼" long.
MT-292-44-E	Steel Sleeve	4" diameter x 8-¼" long.
MT-293-44-B	Grinding Sleeve	4" diameter x 4" long.
MT-293-44-C	Steel Sleeve	4" diameter x 4" long.

These Grinders F.O.B. Los Angeles, California.





Dust collector
adjustable to hang
below or lay on bench

★ **Assures safe — efficient — quiet brakes**

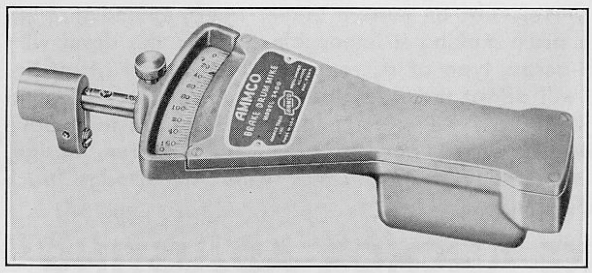
★ **Increases brake service profits**

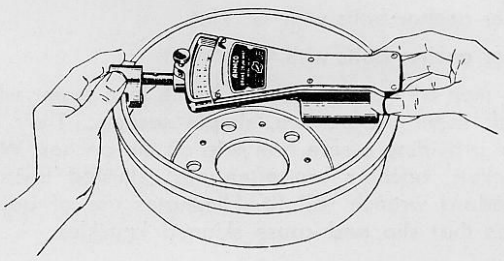
★ **Fast — Efficient — Economical**

★ **Accurate and Easy-to-Use**

★ **Clean — no flying dust**

★ **Services 9" to 16" Shoes up to 4" wide**





SAFE-ARC BRAKE SHOE AND LINING GRINDER

C-3062 Grinder Complete with 1/3 H.P. 1750 R.P.M. motor and one Grinding Sleeve.

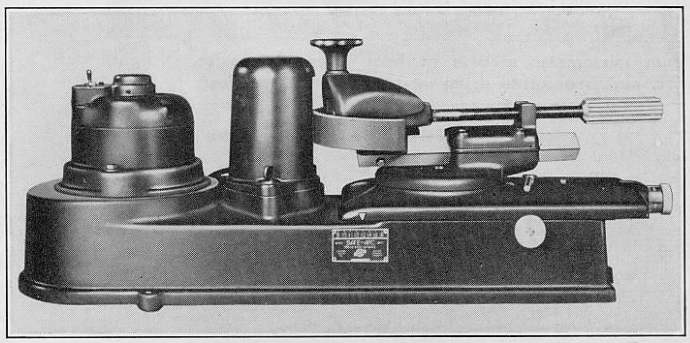
C-3064 Box of ten Grinding Sleeves for C-3062 Grinder.

Be Safety Sure — Match Lining to Accurate Arc of Drum

Safe-Arc ground brakes are safe and quick without usual "wear in". Grinder also eliminates usual 1,000 mile free brake adjustment because brake linings fit brake drum on original installation.

Accurately grinds 9" to 16" diameter brake linings up to .050" under standard drum diameter for providing new effective tapered brake lining adjustments.

Provides quick set-up, easy operation and accuracy. Especially recommended for all passenger car brake service departments.



Pat. Pending

Grinds Set of 8 Shoes In Only 4 Minutes — Builds Brake Service Profits

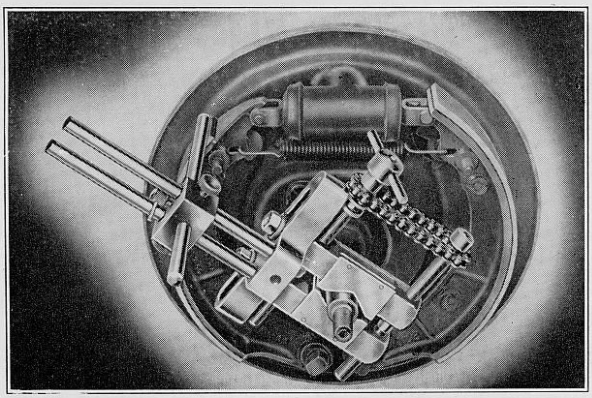
You can now afford to give every customer a precision brake reline job, for this machine accurately contour grinds all 8 shoes in the time you'll save in adjusting heel and toe clearance. Taper-ground brake linings should be ACCURATELY adjusted to EQUAL heel and toe clearance using an accurate gauge such as the Miller MT-19 TruBrake Drum and Brake Shoe Gauge.

BRAKE DRUM MICROMETER

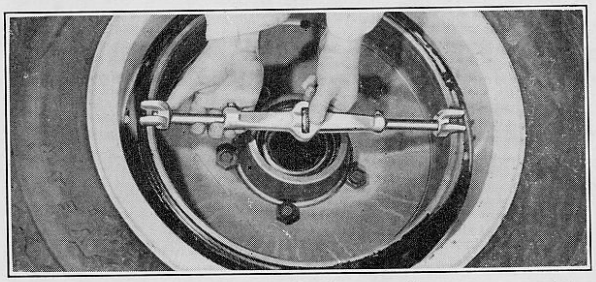
C-3063 Checks all drums from 9" to 16¼" Dia. from .030" undersize to .165" oversize.

Use With Safe-Arc Grinder — Checks Brake Drum Size

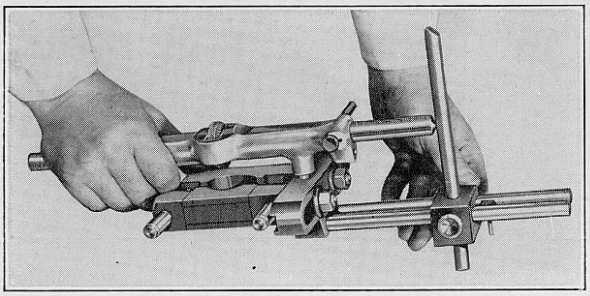
Be safe — be sure — check all four brake drums for size with this easy-to-use direct reading, dial type micrometer. Some drums may be .010" undersize, while another drum on the same car may have been rebored to .030" or .040" oversize. Spring loaded, hardened pins allow accurate readings with minimum of effort and skill.



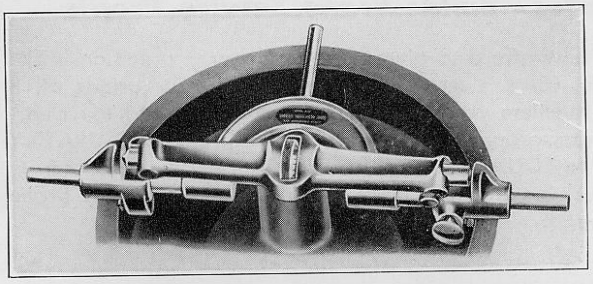
Brake gauge mounts and locks, directly on spindle, axle shaft or axle tube—no adapters necessary.

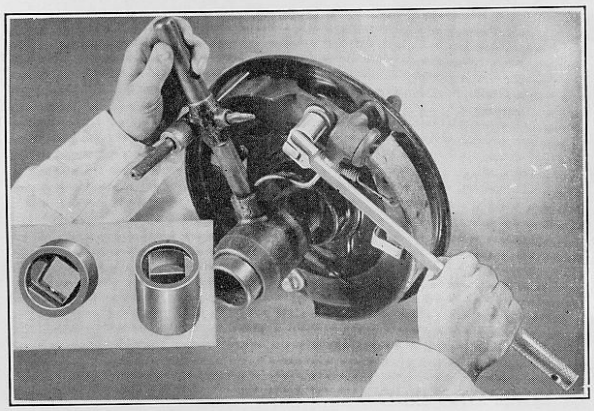


Drum micrometer mounts in hook type fingers or straight pins, makes accurate drum measuring easy and fast.



Micrometer mounts in brake shoe gauge with hardened dowel pin—transfers exact drum size easily.





BRAKE ADJUSTING GAUGES FOR PASSENGER CARS AND TRUCKS

DD-1168 For all passenger cars and trucks up to 2½ ton capacity.

Fits all spindles and axles from ¾" to 3" diameter. Accommodates full range of brakes from 9" to 16½" diameter. Special adapters included for Ford, Mercury and Lincoln axles. Supplied complete with Drum Micrometer. Also less Drum Micrometer to owners of Pedestal Type Brake Shoe and Lining Grinders as shown on Page 54.

DD-1167 For all passenger cars and trucks up to 4 ton capacity.

Fits all spindles and axles from ⅝" to 4⅝" diameter. Accommodates all brakes from 9" to 16½" diameter. Adapter available to increase range to 21½" diameter brakes. Supplied complete with Drum Micrometer. Truck brake mechanics will turn out better brake jobs faster with this simple gauge. Eliminates need of demounting tire and wheel assemblies to expose peep hole in drum.

"V" Type Jaws Eliminate Loose Adapters

The hardened and ground "V" jaws are chain locked together to provide a fast, positive and accurate fit to spindle or axle. No loose adapters or bushings are required. DD-1167 is equipped with reversible "V" blocks which accommodate maximum range of axle sizes.

Drum Mike Checks Drum Diameter Also Sets Brake Shoe Adjusting Gauge

Drum Micrometer will check drum size accurately to thousandth part of an inch. Order Micro-Check to adapt drum mike to Dodge Truck drums where hub projects past outer edge of drum. Drum Mike mounts on brake shoe gauge for setting it automatically to proper drum size. No special skill is required. Use of this gauge helps assure maximum brake efficiency — especially essential for adjusting brakes equipped with new tapered linings. Also checks cam post height.

BRAKE DRUM MICRO-CHECK

DD-1169 For all drums from 9" to 19" diameter.

Most all wheel hubs on current model trucks extend through the brake drum making it impossible to mike the drum with a straight-across type of micrometer. This special offset jig, however, will adapt the standard drum micrometers supplied with the Pedestal Type Brake Shoe Grinders and the above brake gauges, to this popular type of truck drum design. Be sure to order this micro-check with your Dodge truck brake shoe gauge.

BRAKE ANCHOR ADJUSTING SOCKETS

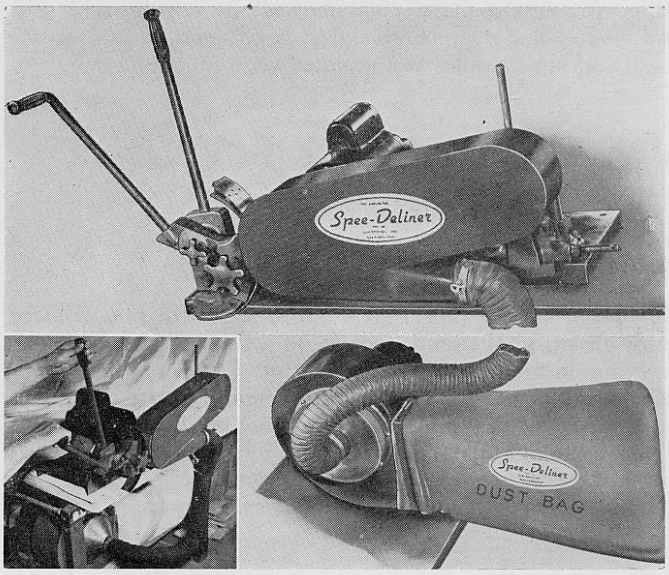
C-898 For anchor bolts with ½" Flat.

C-899 For anchor bolts with 9/16" flat.

Brake service men will turn out better brake jobs faster when equipped with these inexpensive, simple sockets. They are forged to size providing a safe firm grip on the anchor. Without these sockets, anchors are often not adjusted because no other standard wrench will fit. Eliminates use of adjustable wrenches that slip and cause skinned knuckles.

NEW SIMPLIFIED EQUIPMENT MAKES IT EASY TO SAFELY AND QUICKLY BOND BRAKE LININGS

Although Kaiser-Frazer and Henry J cars are not equipped with bonded type brake linings, you'll find a large, profitable market for bonded lining service among most other popular makes of cars. Because so many cars are factory equipped with bonded linings, you'll miss an important part of the brake service market if you offer rivetted service only. Brake bonding service essentially requires only two units of specialized shop equipment. One, a fast deliner such as described below, and second, a fast, dependable bonder like the Knu-Bonder also described on this page. Accurate brake shoe adjustments are still essential—be sure—be safe—use an accurate gauge such as illustrated and described on previous page. Your brake service mechanics can perform bonding service in the same shop space usually devoted to brake lining riveting.



REQUIRES NO SKILL TO OPERATE

One handle of machine revolves shoe against abrasive belt—other handle provides feed. Brake shoe is rigidly held in fast clamping jig. Correct motor size and speed is essential for fast delining and maximum belt wear—order your machine complete with motors and receive it assembled ready-to-use.

BONDED BRAKE LINING REMOVER

MT-351 Deliner only, less motor. May be ordered with or without 1 H.P., 3450 R.P.M., ball bearing, 115-230 Volt, 60 Cycle motor complete with cord and switch.

MT-352 Box 10 extra grinding belts.

MT-353 Dust Collector complete with 6 feet of 3" dia. hose less motor. May be ordered with or without 1/3 H.P. 3450 R.P.M. 115 Volt, 60 Cycle Motor.

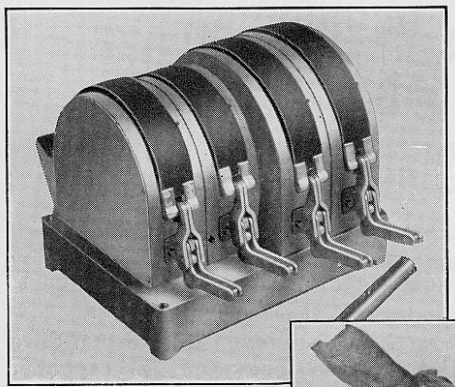
MT-354 Replacement Dust Bag.

Delines 40 to 50 Shoes Per Hour

The 2½" wide x 48" long, coarse abrasive belt completely removes a full lining from a 9", 10", 11" or 12" brake shoe in only a few seconds. Brake shoe is finished clean and bright, ready for bonding. One of these machines, complete with motorized dust collector, will eliminate the delining bottleneck of most any brake bonding department by supplying clean shoes as fast as most bonders can bond. Write for catalog page F-615 for additional details.

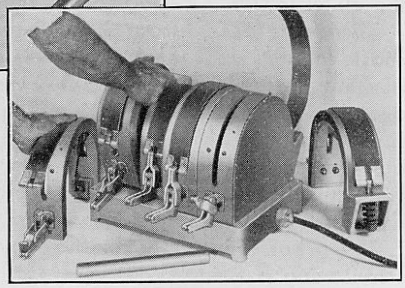
KNU-BONDER BONDS 4 LININGS AT ONE TIME

All One Size or Four Different Sizes



— FAST — BONDS 30 To 40 Shoes PER HOUR

Separate Thermostat Controls EACH Anvil.



Anvils Can Be Interchanged Quickly!

9"—10"—11" & 12" Dia. Anvils Available

KB-9000 Base and four anvils complete with separate timer and 6' lead wire. (Specify size of anvils desired.)

SPECIFICATIONS

220 Volt
Built-in Thermostats
500° and 525° Temp. Sticks Supplied
Separate Timer Supplied
Size 12" x 16"
Weight 50 lbs.

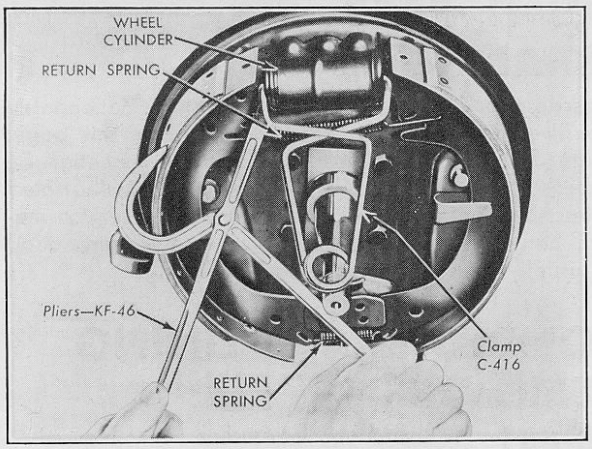
9" Anvil 1050 Watts
10" Anvil 1125 Watts
11" Anvil 1200 Watts
12" Anvil 1300 Watts
Costs only 5c to 6c per hour to operate, based on four 9" anvils and power @ 2½ per KWH.

Ideal For Both Parts Departments And Brake Service Shops

Here's a high production — yet low-cost — bonder that will fit into the needs of small, medium and large brake bonding shops. It can be equipped with anvils of four different sizes or all one size — either way it will produce as many as fifty shoes an hour. Extremely simple and foolproof construction — can be operated by unskilled help after only five minutes instruction.

Extra Anvils Available Separately — Can Be Ordered As Desired

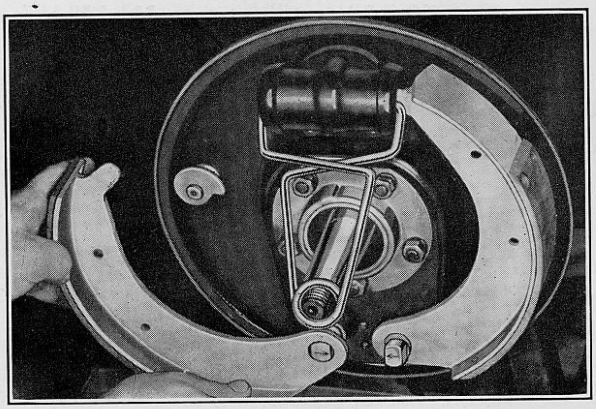
Extra anvils merely "plug" in so you can buy your bonder with four different size anvils or with extra anvils of the same size for peak bonding periods.



BRAKE SHOE RETURN SPRING REMOVING AND INSTALLING PLIERS

KF-46 For all 1947, '48, '49, '50, and 1951 Kaiser and Frazer cars. Also all 1951 Henry "J" models.

Removal and installation of these springs is made safe and easy through the use of these forged special pliers. The "C" shaped jaw has a sharp point that allows a safe, sure grip on a brake lining rivet. A special hook on opposite jaw securely grips spring for safe, fast removal or installation.

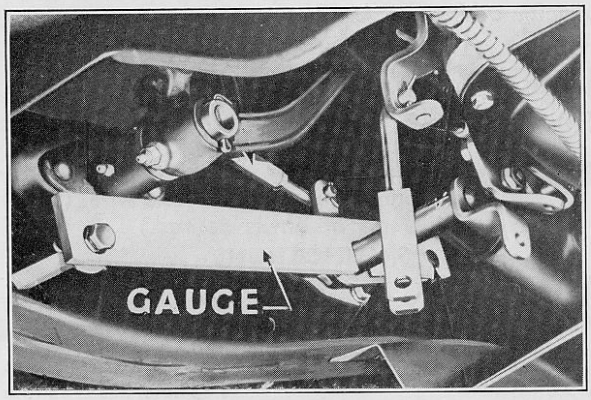


BRAKE CYLINDER PISTON CLAMPS

C-416 Set of 4 Clamps for Most All Cars

Your brake Service Department can use several sets of these handy spring steel clamps that fit all sizes of brake cylinders. They are instantly appreciated by all brake mechanics for holding brake pistons in cylinders when the brake drum is removed. Saves brake fluid — extra bleeding of lines and loss of time. Brake drum cannot be installed without removing clamp. One clamp fits all sizes of cylinders — four clamps required to a car. Four clamps to a set.

CLUTCH

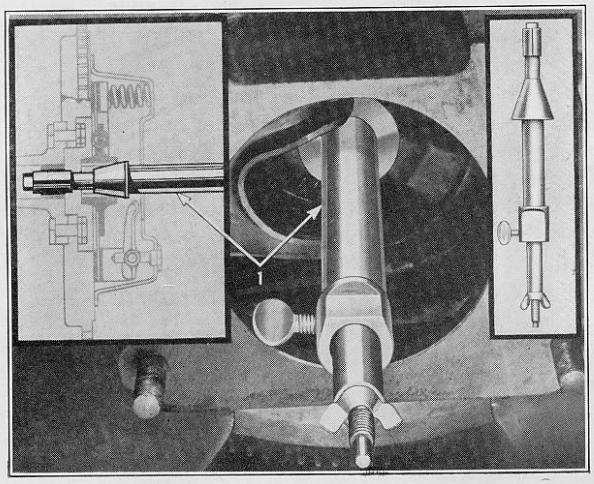


CLUTCH PEDAL OVER-CENTER SPRING ALIGNMENT GAUGE

KF-38 For 1947 and 1948 Kaiser and Frazer cars.

Use this gauge to check and adjust the clutch pedal over-center spring alignment as illustrated and provide your owners with the full benefit of this engineering achievement.

See Kaiser-Frazer Service Manual for detail operating instructions.



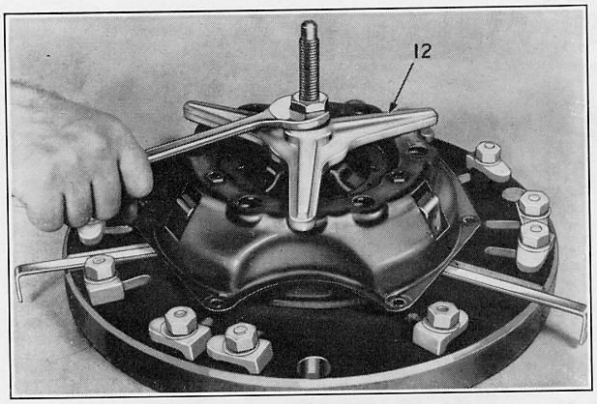
UNIVERSAL CLUTCH PLATE ALIGNING ARBOR

C-360 For all 1947, '48, '49, '50, and 1951 Kaiser and Frazer cars. Also all 1951 Henry "J" models.

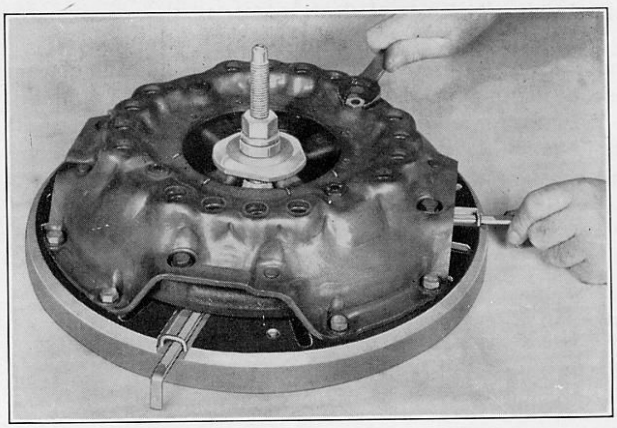
Be sure the transmission main shaft will slip into the clutch driven plate hub when you assemble the transmissions, by first using this arbor to hold the clutch plate in position while the clutch cover is bolted to the flywheel.

There's no need to use 8 or 10 different transmission drive shafts for this work if you have this one arbor. The expander bushing on the end of the C-360 Arbor can be tightened in even a worn clutch pilot bushing. The hardened tapered arbor fits the splined hub of all the various sizes of driver plates and quickly brings the whole plate into accurate alignment. The wing nut and spacer hold the tapered cone in position while the clutch cover is bolted in position.

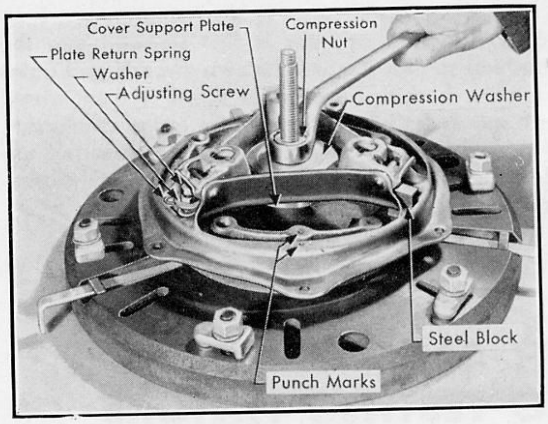
The arbor is instantly removed by loosening the expander screw wing nut.



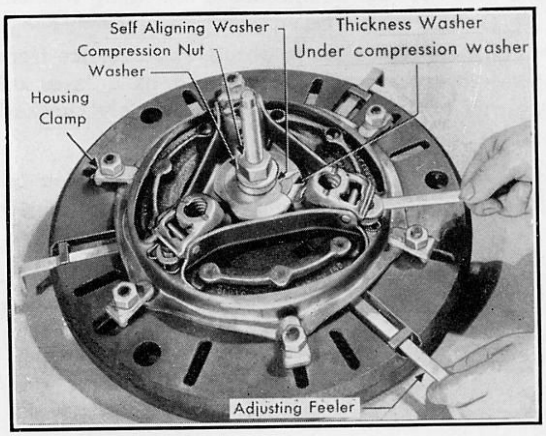
COMPRESSING PASS. CAR TYPE BORG & BECK CLUTCH



ADJUSTING TRUCK TYPE BORG AND BECK CLUTCH



COMPRESSING AUBURN CLUTCH



ADJUSTING AUBURN CLUTCH

CLUTCH REBUILDING AND ADJUSTING FIXTURE

C-585-C For all 1947, '48, '49, '50, and 1951 Kaiser and Frazer cars. Also all 1951 Henry "J" models.

KF-123 Adapter Kit for C-585-A Fixture to service 1951 Henry "J" models.

HENRY "J" ADAPTERS

Owners of C-585-A Fixtures should order the KF-123 Adapter Kit so that their present fixture may also be used to rebuild and adjust Henry "J" clutches. Kit contains hold-down cap screws with instructions for drilling and tapping C-585 base plate. New, special compression plate is also included. Use thickness spacer C-585-16 or 17 to properly adjust the particular model of clutch being serviced. Thickness spacer chart, supplied with fixture, shows proper spacer to be used by clutch part number.

Clutch rebuilding and adjusting service can be an important part of every dealer's service operation. Such a department requires a minimum of special equipment but can contribute generously in parts and labor sales that would otherwise be spent with a competitive shop. Such a department also is invaluable in preventing customer dissatisfaction by controlling quality of clutch rebuilding and adjustments, that is not possible where this service is "farmed" out to disinterested independent shops not equipped with the latest car factory instructions and specific service information.

The top illustration shows how simple it is to safely compress a clutch, preliminary to removing the springs and other parts for checking and possible replacement.

The second illustration shows how the levers are adjusted to "hair-line" accuracy by using the accurately ground feelers of the fixture against the clutch pressure plate, while the levers and springs are under actual working tension. This method automatically allows for strain and consequent distortion in the clutch housing. Operating instructions supplied with each fixture.

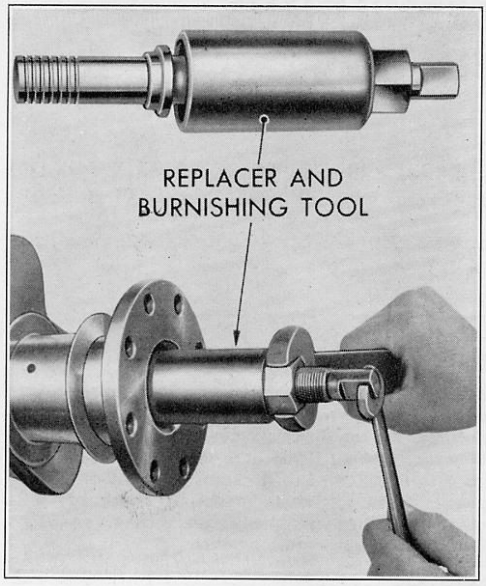
CLUTCH ADJUSTING FIXTURE SERVICE PACKAGES

C-827 For Modernizing early model C-585 Fixtures with Latest Type Feelers.

Package includes a set of 3 new improved type feeler gauges, with hardened and ground gauge surfaces together with 3 lock staples. Installation instructions are packed with each kit. Illustration at left shows Auburn clutch being properly adjusted on C-585 fixture, using spacer No. C-585-20 and parts contained in C-824 package.

C-824 For Adapting early model C-585 Fixtures For Servicing Auburn Clutches.

Owners of original C-585 Fixtures can add this inexpensive kit of parts to their fixtures and adapt it to service Auburn Clutches. Package includes 3 steel blocks, cover, support plate and a new type compressor washer. These parts are all shown in use in illustration of fixture compressing Auburn Clutch.

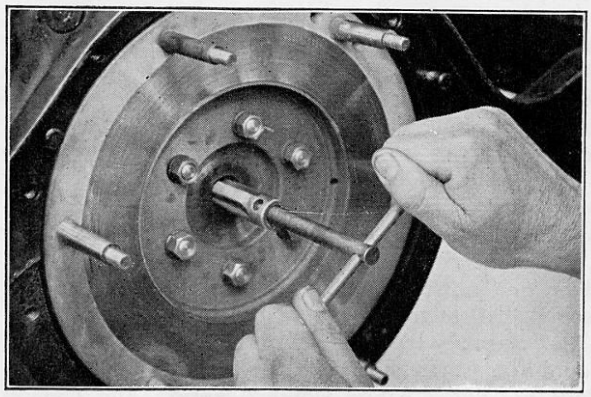


CLUTCH SHAFT PILOT BUSHING INSTALLING AND BURNISHING TOOL

KF-6 For all 1947, '48, '49, '50, and 1951 Kaiser and Frazer cars. Also all 1951 Henry "J" models.

These are two purpose tools copied from the machine that originally installs these bushings at the car factory. By slipping a new bushing over the ground end of the tool, it is used as a driver to correctly install a new oilite bushing in the end of the crankshaft or torque converter. It is best to use a soft hammer with this tool. The cup is then installed and the tool pulled out of the bushing which automatically burnishes the inside diameter of the bushing to the correct size and to a smooth long-lasting finish.

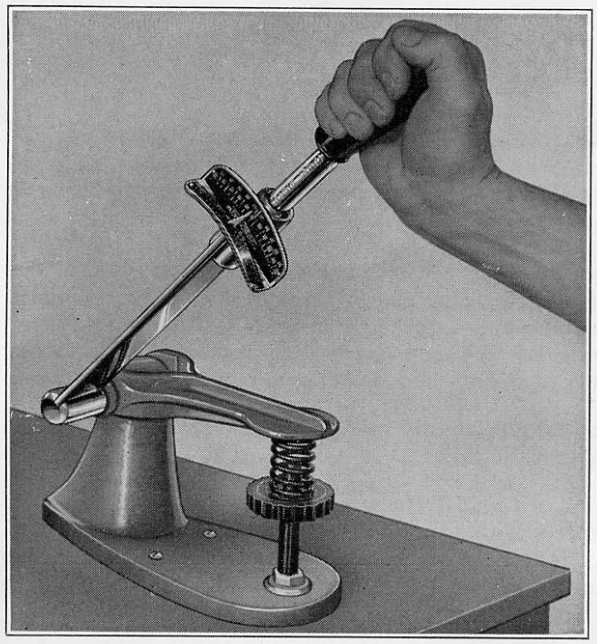
These oilite bushings should not be reamed. Installing them with one of these special tools also assures a tight bushing, for the burnisher swedges the bushing tight in the crankshaft as it finishes the bushing, while being pulled out with the cup and pressure nut.



CLUTCH SHAFT PILOT BUSHING REMOVER

KF-5 For all 1947, '48, '49, '50, and 1951 Kaiser and Frazer cars. Also all 1951 Henry "J" models.

The hard, taper threaded adapter is first screwed into the soft bronze bushing so that it makes its own threads and gains a solid grip on the bushing. The puller screw is then turned into it and as it strikes the bottom of the hole in the crankshaft, the bushing is forced out of the crankshaft. Be sure and use tool KF-6 (illustrated above) for installing and correctly burnishing the new bushing to size.



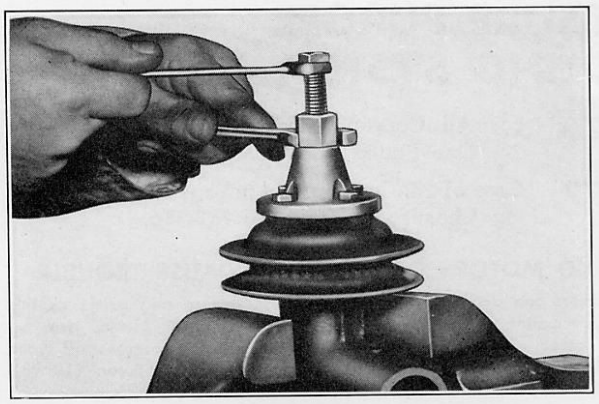
CLUTCH AND VALVE SPRING TESTING FIXTURE

C-647 Use with 100 foot pound torque indicating wrench.

This low-cost jig makes it possible to obtain extra service from your foot pound torque wrench. By using it as a lever all types of clutch and valve springs can be accurately checked before reassembly.

Adjustable anvil plate is scribed for easy centering of spring and has its own scale for fast adjustment to proper height.

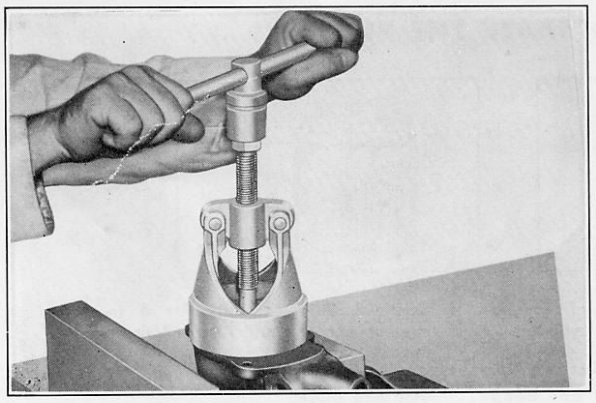
A special built-in sound device indicates instant that compression beam passes center. This allows operator to keep his eyes on torque wrench scale and obtain very accurate spring tension reading.



WATER PUMP FAN HUB PULLER

W-115 For all 1951 Henry "J" models.

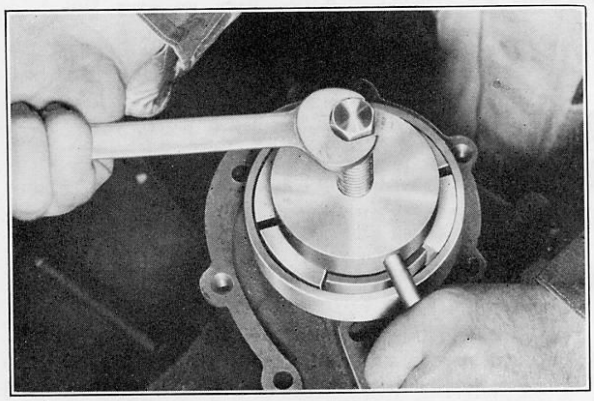
This small inexpensive tool will save its cost many times over in time and material saved. Attaches to water pump fan hub with fan blade bolts. Its use avoids shearing water pump impeller pin or damaging impeller when disassembling pump. Be sure to remove fan hub dowel pins before attempting to remove hub.



WATER PUMP IMPELLER PULLER

W-116 For 1951 four cylinder Henry "J" models.

When servicing this type of water pump the impeller must be removed before the remainder of the pump can be dismantled. Removing the fan hub will not allow the shaft and bearing assembly to be removed. Use this special puller as illustrated and safely remove the various sizes of impellers found in this type of water pump. Hooks safely under impeller blades.



WATER PUMP IMPELLER PULLER

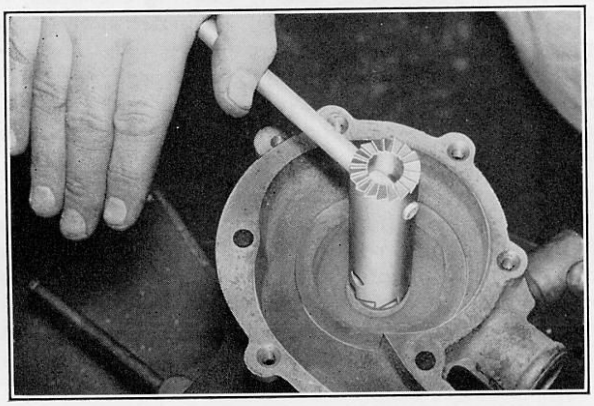
KF-29 For all 1947, '48, '49, '50, and 1951 Kaiser and Frazer cars.

The water pump impeller must be removed before the pump bearings or its seal can be serviced. Limited clearance and the danger of breakage to the impeller eliminates the practical possibility of removing the impeller without this special puller. Servicing only a couple of water pumps will repay the investment in one of these special pullers.

Puller Jaws Available Separately For 1951 Kaiser Cars.

KF-113 Set of puller jaws and special puller screw to adapt KF-29 Puller to 1951 Kaiser cars.

Owners of early model KF-29 Pullers should order this set of jaws and screw to adapt their tool to later model pumps.



WATER PUMP SEAT REFACER

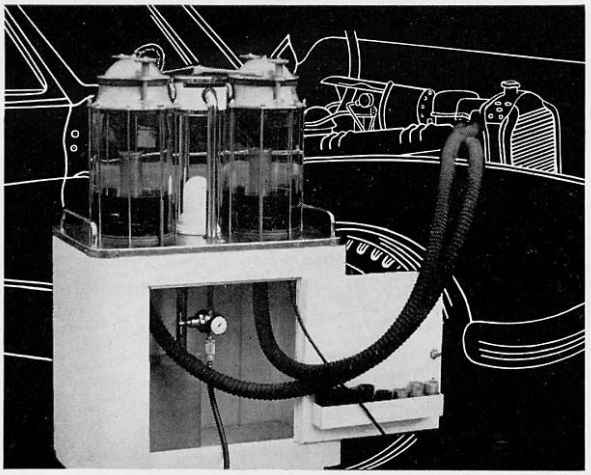
KF-23 For all 1947, '48, '49, '50, Kaiser and Frazer cars, also 1951 Frazers.

C-551 For 1951 four-cylinder Henry "J" models.

Most water pump leaks are caused by damaged seals and rough seats in the pump housing. The sealing seat built into the cast body of the pump can be easily resurfaced as good as new with these easy-to-use refacers which pilot on the pump shaft.

Best results are obtained by revolving refacer with the palm of one hand on the end of the handle with a slight constant pressure. Refacer will then turn the water pump shaft, machining a smooth, concentric seat and automatically "clear" itself as the seat is finished.

Refacers are double end providing a roughing and finishing cutter in a single tool.



PRESSURE PURGER COOLING SYSTEM CLEANER

MT-276 For All Cars and Trucks — Includes Case of 24, One Pound Packages Purgite.

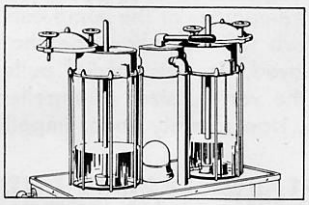
MT-277 Case of 24, One Pound Packages Purgite Cleaning Chemical — Use With MT-276.

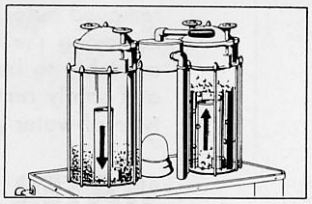
HAS NO MOTORS OR PUMPS TO CAUSE TROUBLE

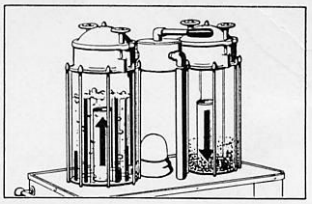
Your customers can actually see the scale, rust, grease and grime as this remarkable machine cleans it from radiators and engine blocks. Uses no motors or other moving parts to go out of service — operates off your regular air line. Completely safe — heating elements operate on 110 volt AC-DC current.

Pressure Flushes Dirt, Rust, Grime, etc. From Cooling System In Full View of Customers

HERE'S HOW SIMPLE IT IS TO OPERATE THE PURGER

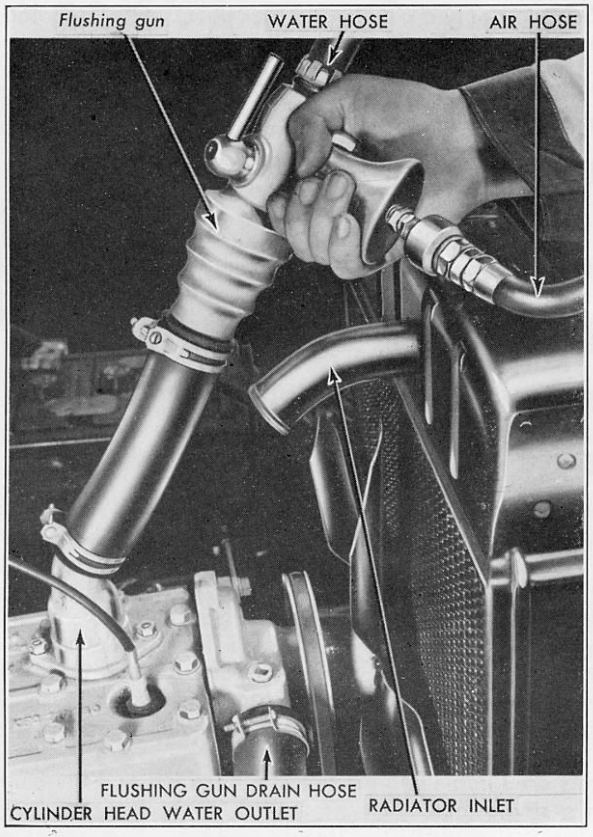






1. Fill each cylinder with water to top of Filter Trap and snap on heating elements which will heat water.
2. Drain Radiator and disconnect hoses while water is heating.

   REMOVE THERMOSTAT.
3. Connect Purger hoses to upper connections of the Radiator and Block.
4. Pour One-Half a package of Purgite into the hot water of each cylinder.
5. Swing Operating Handle to Position No. 1 and hold until solution has been forced into opposite cylinder. Then swing Operating Handle rapidly to No. 2 Position until no more rust and scale is brought into opposite cylinder.
6. Continue this procedure for 5 to 10 minutes and this will "Purge" the Cooling System.
7. Connect Hoses and refill cleaned Radiator and Block.
8. Radiator and Block can be done separately if desired.
9. Attention Compelling Dome Light between Cylinders, lights up when Purger is operating.



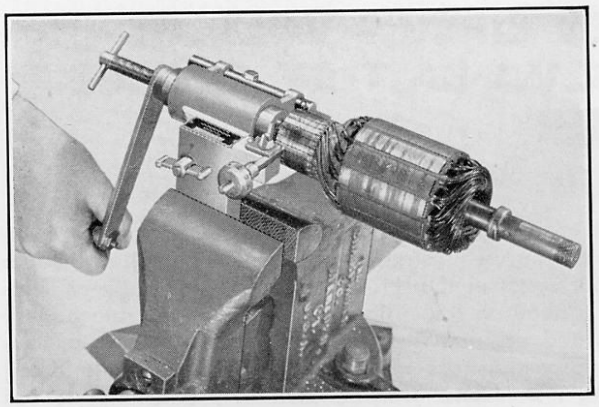
MILLER "REVERSE FLOW" RADIATOR AND ENGINE BLOCK FLUSHING GUN

C-311 Complete with Hot Water Heater Adapter. For All cars.

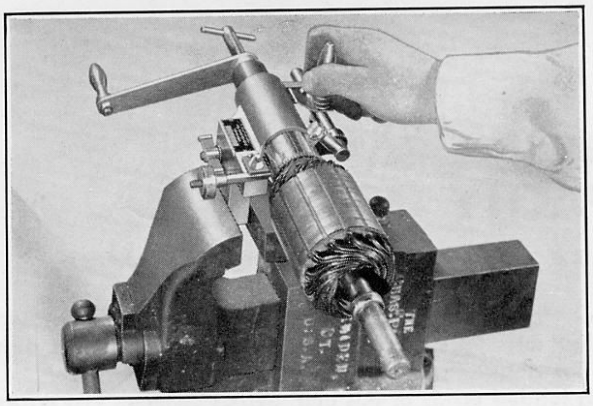
Shops that do not have a sufficient demand for cooling system flushing service to justify the investment required for a MT-276 Pressure Purger will find this efficient gun a worthwhile addition to their shop equipment.

When used with recognized, quality cleaning chemicals, it provides a reverse flushing action that eliminates many stubborn and aggravated overheating complaints. Air is safely injected by use of the trigger action valve to produce a pulsating or surging action to break off rust and sludge scales. Radiator should be flushed separate from engine block to avoid forcing scale from block into radiator core.

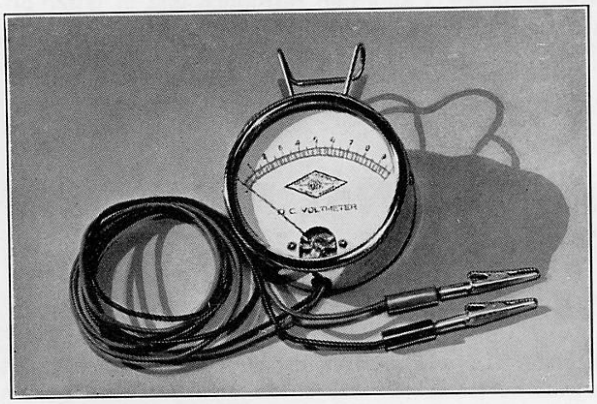
No special equipment is needed to put it into immediate service for it attaches to standard air and water connections as illustrated. An old inner tube, cut in half, makes an ideal drain hose. The built-in water valve provides full control that eliminates unnecessary splashing and waste of water. Unique design of gun nozzle fits most all sizes of radiator hose. A special small nozzle is also supplied for flushing hot water heaters.

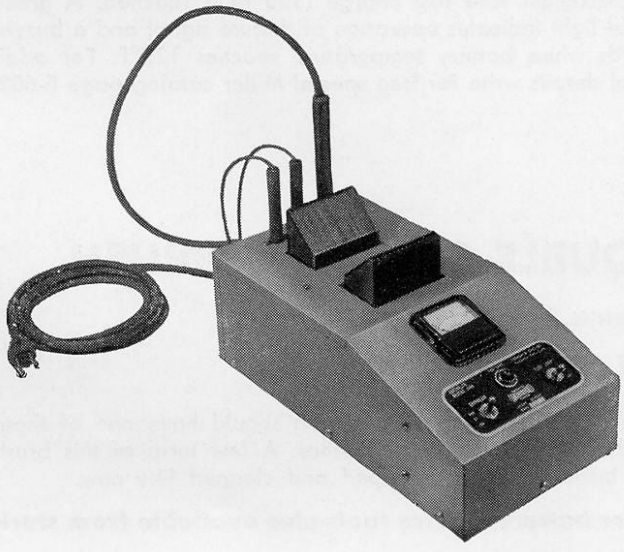


TURNING ARMATURE



UNDERCUTTING MICA





ARMATURE TURNING AND UNDERCUTTING TOOL

C-770 For All Starter and Generator Commutators.

Be Sure And Check C-770-SP-840 Kit Listed Below When Ordering This Tool

This fast acting turning tool is accurately installed and locked on the armature shaft with a ground adjustable collet. This assures accurate centering of the armature in the threaded spindle of the tool. Turning the crank handle in a clockwise direction turns the complete armature and automatically feeds the tool bit across the commutator. Feed screw has 104 threads per inch, providing a smooth turned finish. Several light machine cuts are better than one heavy cut as this eliminates folding the copper over into the mica groove. Undercutting the mica insulation is easily and quickly accomplished as illustrated. Replacement undercutting saws are available.

Adapters Available to Service Windshield Wiper and Heater Motor Armatures

C-770-SP-840 Contains ¼" and 5/16" collets.

Contains collets and special undercutting blade for heater and windshield wiper motor armatures. If you already are using one of these efficient low cost armature turning and undercutting tools you can increase its capacity with this inexpensive set of adapters and obtain greater service from your modest investment. Customers ordering the C-770 should include this kit in their order.

SENSITIVE VOLTMETER— CALIBRATED IN 1/10 VOLTS

C-537 Has full 10 volt scale for all automotive service.

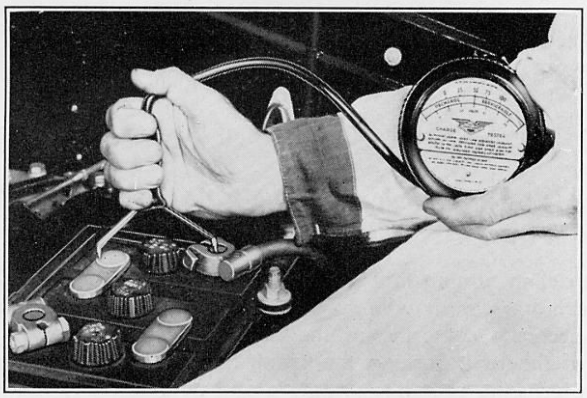
Most voltmeters are not especially adapted to automotive service and, consequently, are not properly calibrated for accurate, easy service on cars and trucks. You'll find this meter has been designed to provide all the needs of the automotive electrician. It hangs conveniently, leaving both hands free to make adjustments. Has large 3½" diameter face making it easy to locate 1/10 volt leakage or resistance points so necessary in correcting lighting circuit problems. Has zero adjustment and alligator clip equipped leads.

ARMATURE TESTING GROWLER

Model 444 For any armature from 2" to 5" diameter.

Also Tests Field Coils and Brush Holder Plates

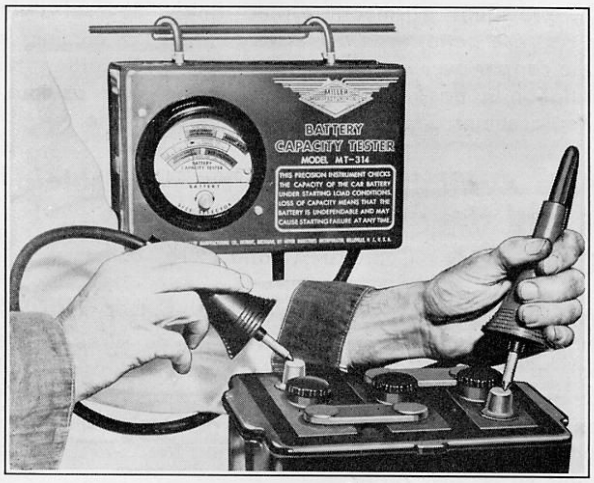
Every automotive electrical service department needs this basic quality tool. Most all car manufacturers outline their recommended test procedures for armatures, field coils, etc. using this type growler. This is a quality Growler equipped with 0-30 amp. A.C. meter, switch for quick change from light to heavy winding tests, 7' heavy duty insulated leads, etc. as shown at left.



OPEN CIRCUIT VOLTAGE (O.C.V.) BATTERY CHARGE TESTER

MT-310 Meter complete with test prods.

Old-fashioned, hard to use hydrometers are no longer necessary when you use this remarkable new tester. It is used to show your customer that his battery needs a charge or if his battery is about to fail. This meter avoids inaccurate battery analysis and damage due to spilled acid as often happens when hydrometers are used. Packed with complete detail operating instructions. Can be used very effectively to sell new batteries and battery charging service.

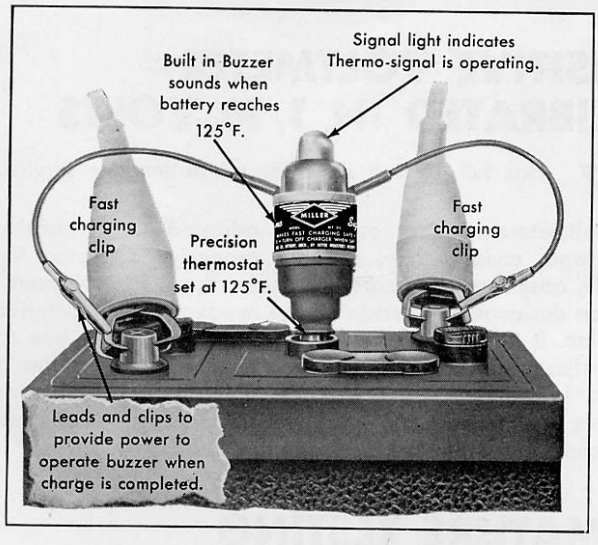


PORTABLE BATTERY CAPACITY TESTER

MT-314 For all 80 to 140 Ampere Hour Batteries.

This is a "Three-in-One" Tester for it has a dual calibrated meter that tests "fast" or "slow" charged batteries. It also is ideal for detecting poor battery terminal connections.

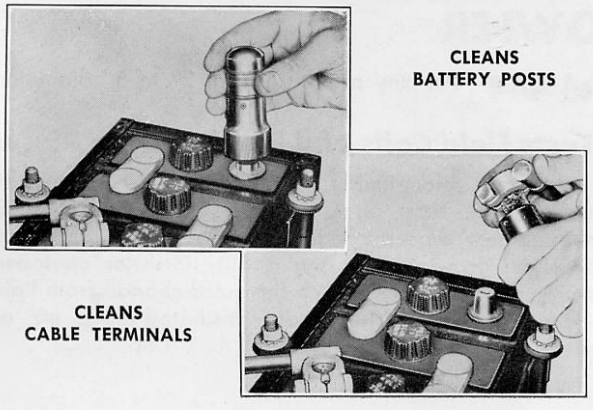
Spring loaded prods of this unit, avoids common test errors of other testers while large 4½" diameter meter provides 1/100 volt accuracy. Calibrated resistance unit in tester discharges battery at 185 amperes.


Built in Buzzer sounds when battery reaches 125°F.
Signal light indicates Thermo-signal is operating.
Fast charging clip
Precision thermostat set at 125°F.
Fast charging clip
Leads and clips to provide power to operate buzzer when charge is completed.

THERMO-SIGNAL FOR FAST BATTERY CHARGERS

MT-315 For all clock controlled chargers.

You can modernize your present fast battery charger with this safety signal device which will automatically indicate when the maximum safe fast charge (125°F) is reached. A green signal light indicates operation of thermo signal and a buzzer sounds when battery temperature reaches 125°F. For additional details write for free special Miller catalog page F-602.



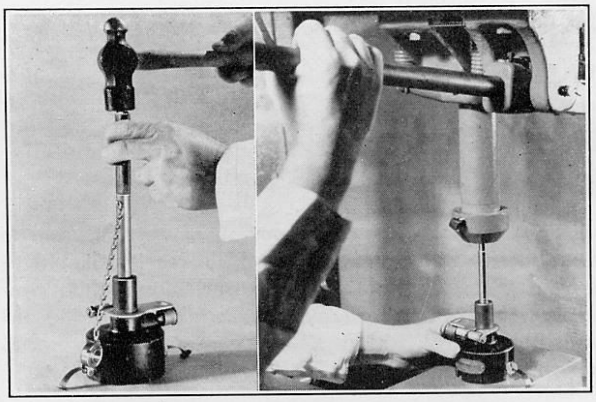
DOUBLE END WIRE BRUSH

Cleans Terminals and Posts

MX-75 Complete with metal cap.

Each of your battery service men should have one of these handy Double End Metal Brushes. A few turns of this brush and battery post is reshaped and cleaned like new.

Other battery service tools also available from stock

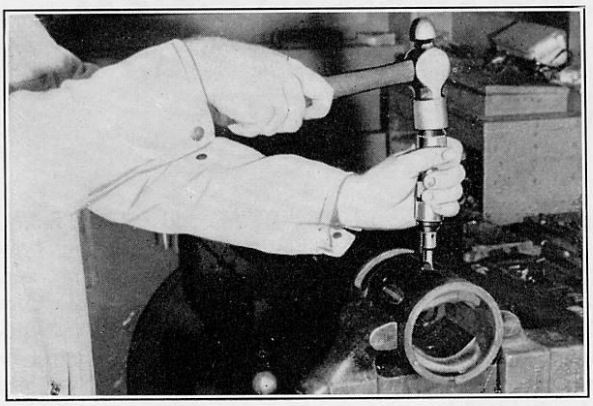


INSTALLING BUSHING BURNISHING BUSHINGS

DISTRIBUTOR DRIVE SHAFT BUSHING DRIVER AND BURNISHER

C-3041 For all Kaiser, Frazer and Henry J cars. Also most all other makes using Auto-Lite Distributors.

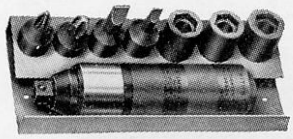
The driver and adapter safely install both the upper and lower bushings as shown. The adapter button has a step on it to allow the upper bushing to be driven below the inside bore of the distributor. The opposite side of the adapter will drive the lower bushing flush with the bottom face of the distributor. Remove both bushings by using driver only. The burnisher is pressed through both bushings, swedging them tightly in place while finishing them to size.



GENERATOR AND STARTING MOTOR FIELD COIL SCREW IMPACT TOOL

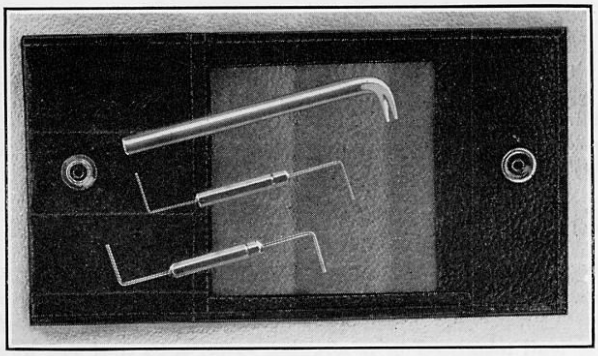
C-3078 Set complete with 4 screwdriver bits and 3 hex sockets.

Here at last is a safe, sure means of removing the large screw which secures the field coil on most all types of electrical motors and generators. By merely grasping the tool and keeping either tightening or loosening tension on it, you can remove or install the tightest screw with light sharp hammer blows. Tool has unlimited applications—Impakdriver only can be purchased separately if desired.



SET CONTAINS:

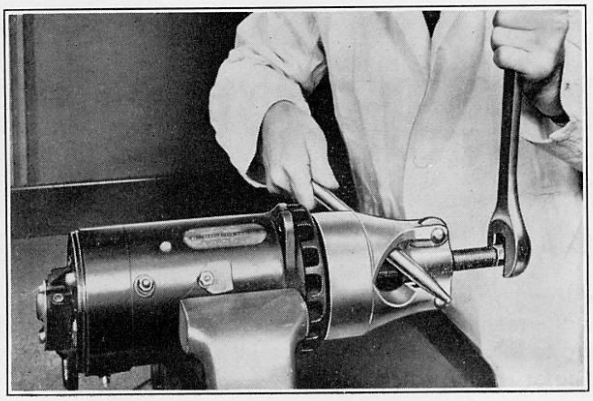
6M	Impakdriver
625SD	¼" Plain Screwdriver Bit
637SD	⅜" Plain Screwdriver Bit
620P	#2 Philips Screwdriver Bit
640P	#4 Philips Screwdriver Bit
643S	7/16" Hex. Socket
650S	½" Hex. Socket
656S	9/16" Hex. Socket
665	Carrying Tray



GENERATOR REGULATOR SERVICE TOOL KIT

C-828 For servicing All V.R.P. Regulators.

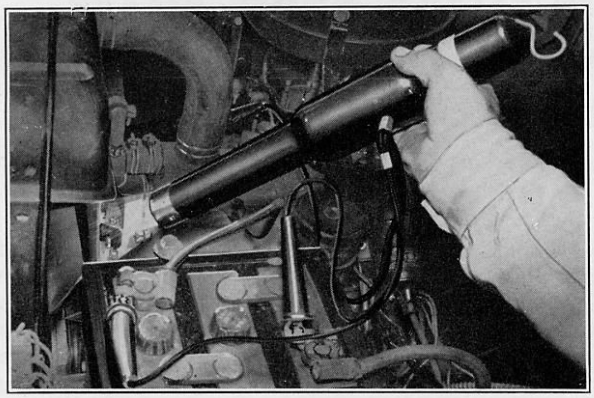
The circuit breaker, current regulator and voltage regulator can all be accurately adjusted to specifications with this simple 3-piece tool kit. The spring hanger clip bending tool snugly fits the hangers. The air gaps and contact points may be accurately checked with the .031", .034", .048" and .052" double end wire thickness gauges.



GENERATOR PULLEY PULLER

C-453 For all 1947, '48, '49, '50, and 1951 Kaiser and Frazer cars. Also all 1951 Henry "J" models.

Exchange of rebuilt generators is greatly simplified and speeded up when this special puller is available to safely remove the pressed metal drive pulleys. Puller has clamp type jaws that fit entirely around the diameter of the pulley and are held in place with easily installed lock ring.

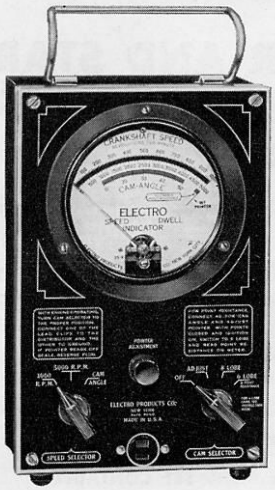


STROBOSCOPIC TIMING LIGHT

C-863 For All Cars and Trucks.

Has High Intensity Blue-White Light

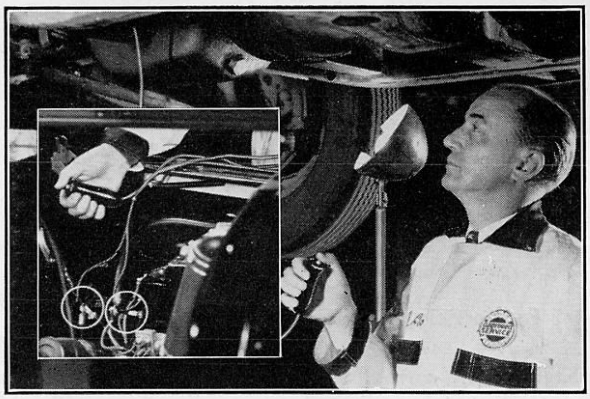
This new light is a direct development of the Strobotron tube, whose intense, instantaneous flash makes it possible to photograph a bullet in flight. The brilliant, bluish-white concentrated light of this unit is many times brighter than the old neon type lights, and makes timing marks easy to read. Complete operating instructions packed with each light.



COMBINATION ELECTRICAL TACHOMETER AND CAM ANGLE DWELL METER

DD-1150 For All Car and Truck Service.

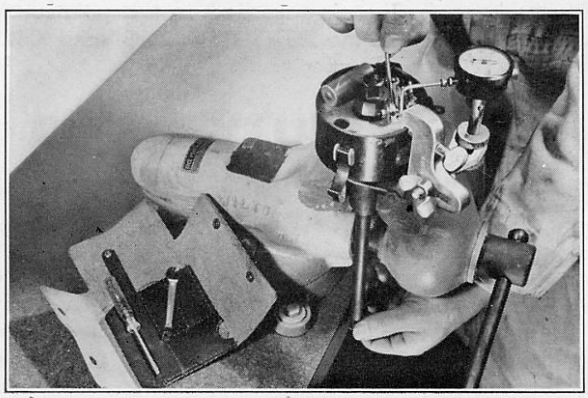
Tachometer has two scales 0-1000 R.P.M. and 0-5000 R.P.M. making it ideal for checking tune-up work, adjusting governors, checking automatic transmissions, ignition timing, etc. Accommodates both 6 and 8 lobe cam distributors. Cam angle dwell meter has a single dial for checking all distributors. Meter can be used accurately with engine running or being turned with starter. This is a self contained battery powered unit, ideal for road checking governors, gas mileage, etc.



REMOTE CONTROL STARTER SWITCH

C-763 Complete with 6 foot cable.

Your mechanics will save time fitting pistons, replacing bearings, etc. when they use this switch to turn the engine over without "getting out from under." The automatic cut-off switch is well insulated in a wooden hand grip and the long two wire cable is fitted with alligator type connectors.

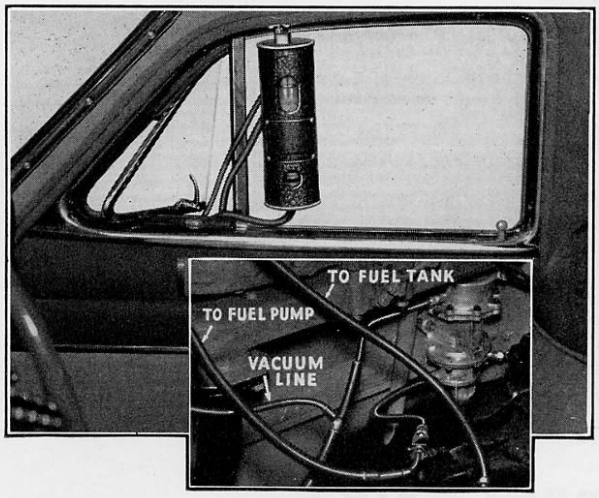


DISTRIBUTOR POINT GAP DIAL INDICATING TOOL

C-707 Complete with dial.

C-707-A Tool less dial.

Increased engine performance is often possible by more accurate adjustment of distributor points. Now you can check point gap to exact thousandth of an inch with an easily read dial indicator as illustrated.



GASOLINE MILEAGE TESTER

DD-425 For All Models.

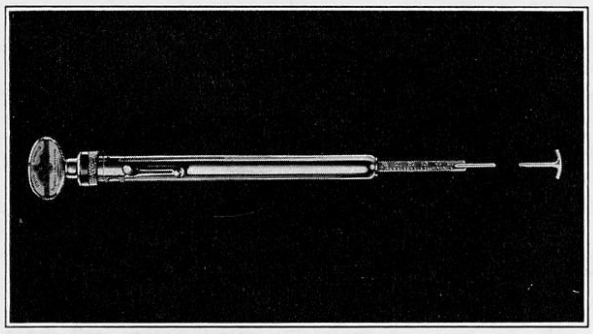
You can provide positive proof of actual gasoline mileage to any critical customer with the use of this 1/10th gallon tester. It hooks over right front door glass and is firmly held in position with two large vacuum cups. Connects into fuel system directly ahead of fuel pump so that all gas used in test must pass through tester in full view of customer. Fills automatically by engine vacuum. Can be shut off with simple valve when not in use. Does not interfere with use and operation of car.

CARTER CARBURETOR SERVICE TOOL KIT

KF-40 For all 1947, '48, '49, and 1950 Kaiser and Frazer cars. ***Buyers of KF-40 should also order KF-141.***

KF-141 For 1951 Kaiser, Frazer and Henry J Models.

Specialized carburetor repair departments will find this kit of tools indispensable for efficiently repairing and rebuilding all types of Carter carburetors used in Kaiser and Frazer cars. Each tool has been carefully selected by Kaiser-Frazer factory service engineers and grouped into this kit for Kaiser-Frazer service departments. The metal case with its fitted solid wooden partitions make it easy and convenient to always keep this kit complete and ready for prompt Kaiser-Frazer carburetor repairs.

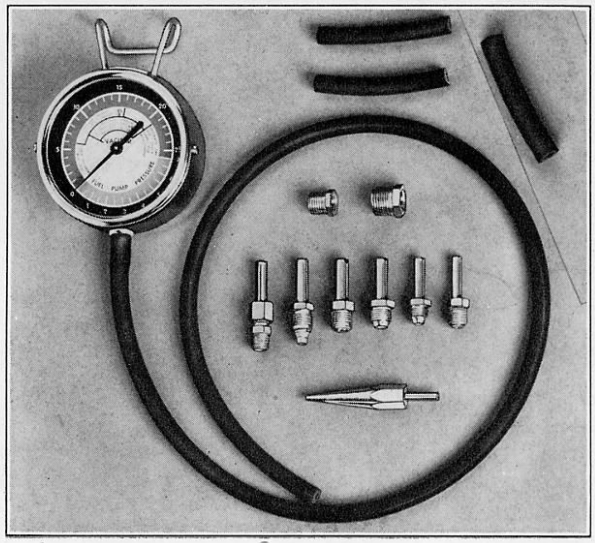


SPRING TENSION CHECKING SCALES

MTU-35 Tester graduated 0 to 12 ounces.

MTU-36 Tester graduated 0 to 48 ounces.

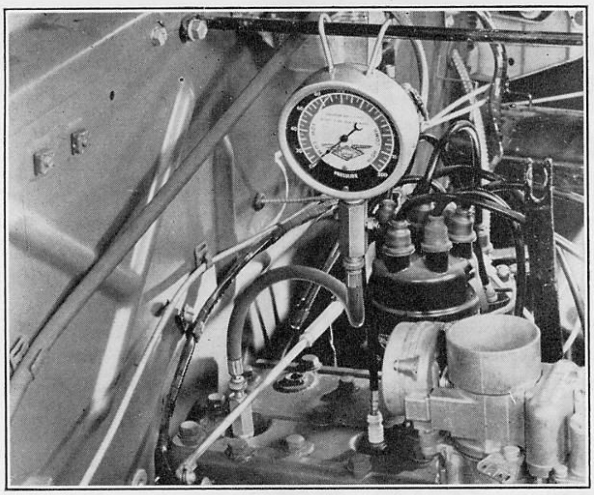
Your electrical service department will operate more efficiently and will be better able to check delicate electrical contact points and springs if equipped with these spring tension testers. The MTU-35 is especially useful for checking voltage and current regulator points. The MTU-36 has a wide variety of uses such as checking distributor point tension, generator and starting motor brushes, relays, etc.



COMBINATION VACUUM AND FUEL PUMP PRESSURE CHECKING GAUGE

C-785 For all 1947, '48, '49, '50, and 1951 Kaiser and Frazer cars. Also all 1951 Henry "J" models.

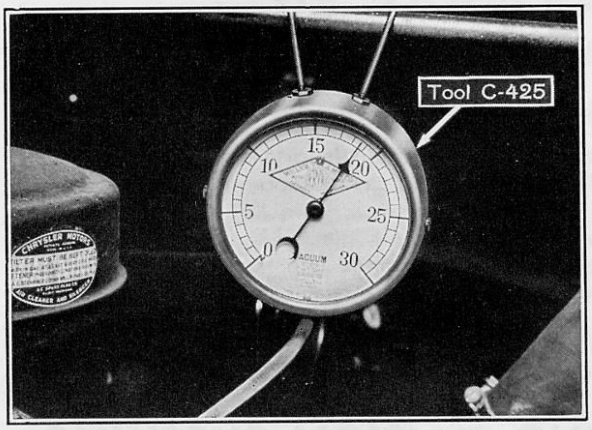
All engine tune-up men appreciate the help of an accurate combination pressure and vacuum gauge like this. For correctly checking the condition and efficiency of most any type gasoline engine. The large, easily read calibrations of this gauge have made it a favorite among experienced engine tune-up men. Convenient hanger hook leaves both hands free to make engine adjustments. In addition to the instructions packed with this gauge most car manufacturer's service manuals outline dependable engine diagnosis instructions based on the use of a dependable meter such as this. Adapters supplied to fit most all engines.



CYLINDER COMPRESSION CHECKING GAUGE

W-189 For all 1947, '48, '49, '50, and 1951 Kaiser and Frazer cars. Also all 1951 Henry "J" models.

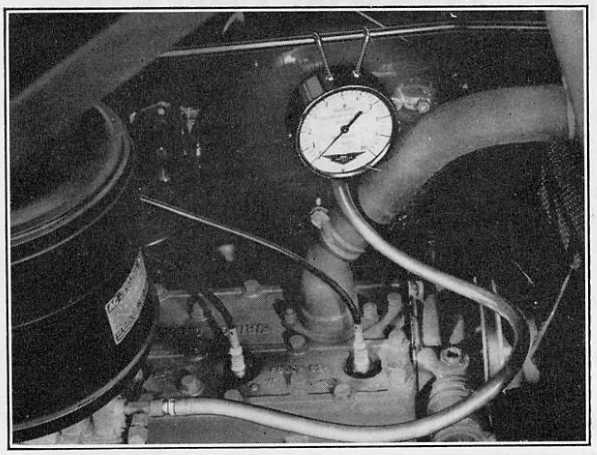
Ordinary cylinder compression gauges with rigid stems are difficult to use efficiently on the cylinders next to the firewall. The flexible hose of this gauge, however, is easily used around the control rods and other obstructions that would have to be removed to use most other types of gauges. Both the popular, universal, cone-type spark plug fitting and screw-type adapters are supplied. Convenient hanger hook leaves both hands free to make necessary adjustments. A one-man operated gauge when used with C-763 Remote Control Starter Switch.



VACUUM GAUGE

C-425 For all engines.

All engine tune-up men appreciate the help of an accurate vacuum gauge like this in correctly checking the condition and efficiency of most any type gasoline engine. In addition to the instructions packed with this gauge most car manufacturer's service manuals outline dependable engine diagnosis instructions based on the use of a dependable vacuum meter such as this.



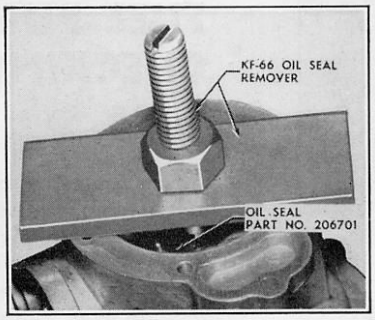
FUEL PUMP PRESSURE CHECKING GAUGE

KF-13 For all 1947, '48, '49, '50, and 1951 Kaiser and Frazer cars. Also all 1951 Henry "J" models.

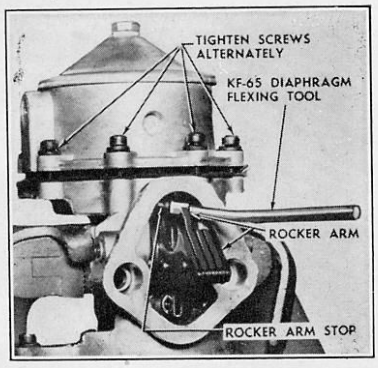
Many carburetion and engine tune-up specialists prefer an accurate single-purpose gauge, such as this, in preference to one with a combination vacuum and pressure scale. The large 3½" diameter, 10 pound calibrated dial makes this gauge easy to read. A special tee connection allows the gauge to be installed in the fuel line without interfering with normal engine operation. Use of this gauge will be found especially helpful in the diagnosis and correction of fuel economy complaints.

FUEL PUMP SERVICE TOOLS

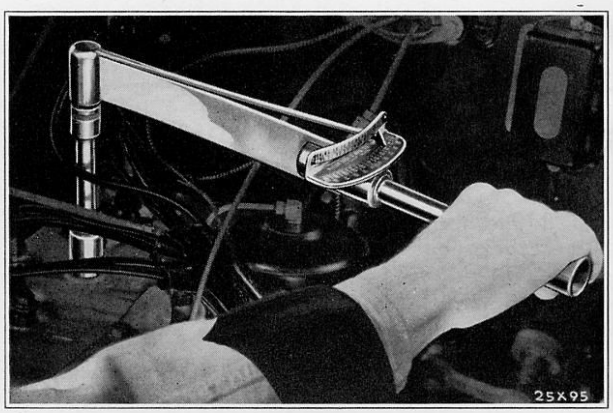
For all 1947, '48, '49, '50, and 1951 Kaiser and Frazer cars. The three simple, low-cost tools illustrated below will more than repay their small cost in parts saved.



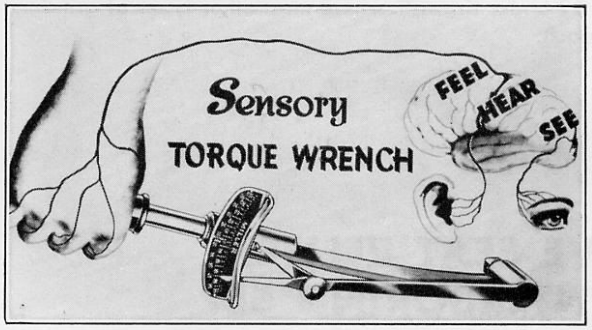
KF-66 Two piece tool for removing and installing fuel pump oil seal. Above illustration shows puller removing seal. Left-hand illustration shows driver portion of tool installing a new seal.

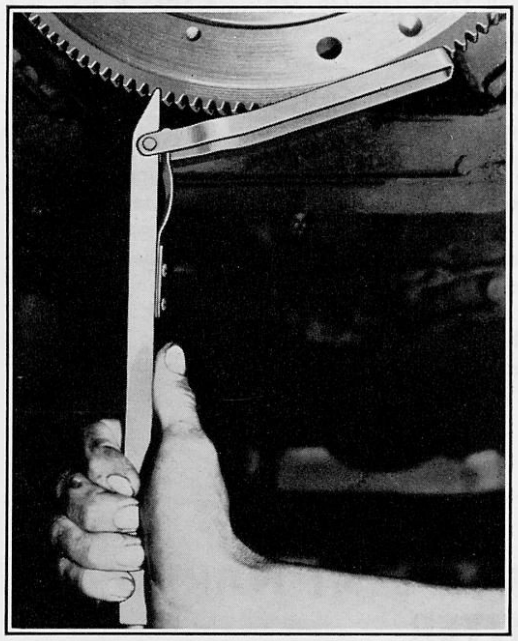


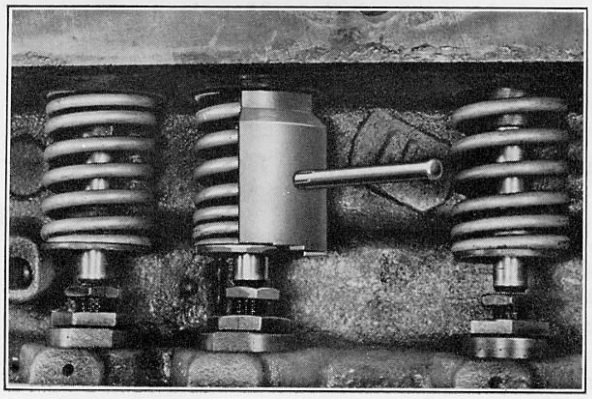
KF-65 Fuel Pump Diaphragm Flexing Tool. Its use often prevents tearing diaphragm when installing fuel pump cover screws.



STANDARD TYPE WRENCH IN USE







DEPENDABLE-FLAT BEAM TYPE-TORQUE INDICATING WRENCHES

Available in Various Sizes— In Standard or Sensory Types

C-524	100 foot pound standard model
C-3005	100 foot pound sensory model
C-685	300 inch pound standard model
C-3006	300 inch pound sensory model
***KF-99**	0-50 foot pound standard model
KF-99-S	0-50 foot pound sensory model

*Round Beam models.

Accurate control of applied torque on all vital studs and bolts such as cylinder head, nuts, etc. has proven its importance in maintaining original engine power and economy efficiency. Be sure your shop uses dependable torque wrenches like these to work to car factory torque specifications.

SENSORY WRENCH IS FAST—OFFERS REFLEX CONTROL—HAS LONG LIFE

An easily adjusted control finger can be set to trip these wrenches at any desired torque. Provides accurate operation even in "blind" or dark locations and under constant high speed production. Signal trigger provides sound and vibration signal as well as sight indication of desired torque.

FLYWHEEL TURNING TOOL

C-771 For All Models.

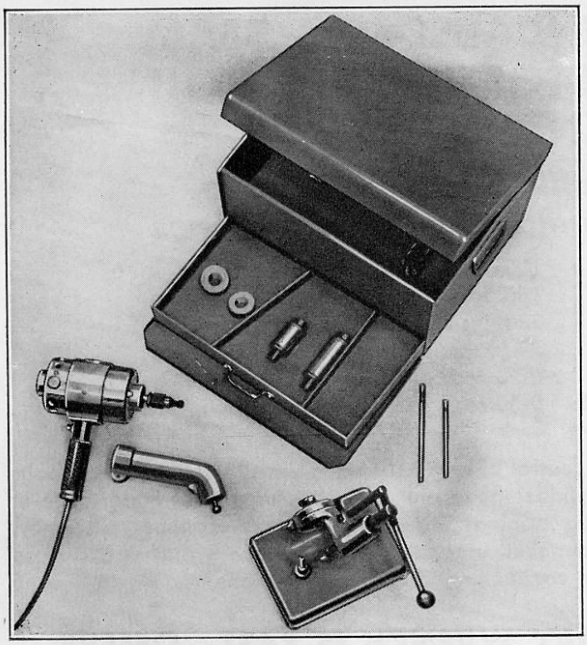
Save time on clutch repairs, bearing replacements, ring installations and other repair jobs by using this simple one-hand tool. It prevents skinned knuckles and unnecessary crawling out from under the car to turn the engine to the desired position with the crank or starter. Tool hooks to flywheel and allows engine to be rotated in either direction. Spring tension holds it on flywheel always ready for the next turn, and allows mechanic to use both hands for other work. Tool folds for easy storing in mechanic's tool kit.

This tool is a time and labor saver when used with C-3047 Piston and Connecting Rod Assembly Tool.

VALVE SPRING LENGTH CHECKING GAUGE

KF-61 For all 1947, '48, '49, '50, and 1951 Kaiser and Frazer cars.

Engine performance can be seriously impaired by improperly closing valves due to reduced valve spring tension caused by deeply refaced valve seats. Thickness shims designed and released by your factory can, however, be easily installed with the valve spring to correct this problem. The use of this special gauge quickly indicates which valve springs should be shimmed for it has "go" and "no go" steps machined into it.



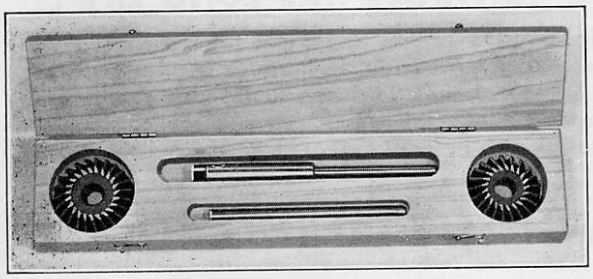
POWER DRIVEN VALVE SEAT GRINDER

KF-102 For 1947, '48, '49, '50, and 1951 Kaiser and Frazer models. Also Henry "J" models.

Set contains 110 volt utility driver with pilot wrench, grinding wheel holder, hexagon ball terminal, and diamond type stone dresser in 14" high x 14" wide and 11" deep tool chest. Also includes angle drive attachment, two grinding wheels with special holders, and one long and one short pilot.

Grinds All Seats—Incl. Those Next to Dash

Angle fitting allows grinder to work efficiently on valve seats #11 and 12 under firewall, where most other types of grinders will not reach.



VALVE SEAT RELIEF COUNTERBORING SET

KF-58 For all 1947, '48, '49, '50, and 1951 Kaiser and Frazer cars.

Counterboring Valve Seat Relief Narrows Valve Seat

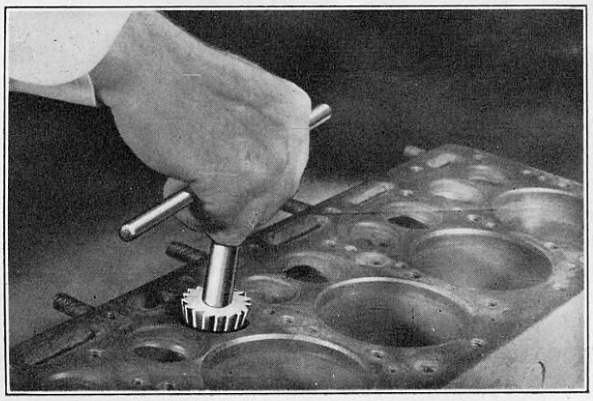
When the valve seat has been refaced several times or where it must be cut quite deeply to recondition it, the seat may become too wide for efficient operation. These special cutters can then be used to recut the counterbore in the surface of the block and narrow the valve seat.
Two cutters are included, one for intake valve seats and one for servicing exhaust seats. One solid pilot is also included to accurately align the cutters from the valve guide.

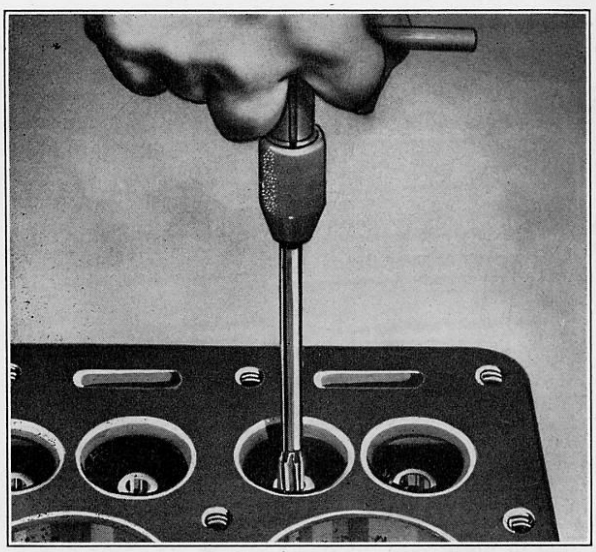
70° VALVE SEAT NARROWING CUTTER (Use With KF-58 Pilot)

KF-63 For all 1947, '48, '49, '50, and 1951 Kaiser and Frazer cars.

Purchase of This Cutter is Recommended at the Same Time the KF-58 Set is Ordered

Usually when the valve seat counterbore must be enlarged with the KF-58 Cutter to narrow the valve seat, the valve port should also be reamed to reduce the inside diameter of the valve seat. This cutter should, therefore, be purchased to complete the KF-58 Set for complete narrowing of the valve seat. It is used on the solid pilot supplied in the KF-58 Set.





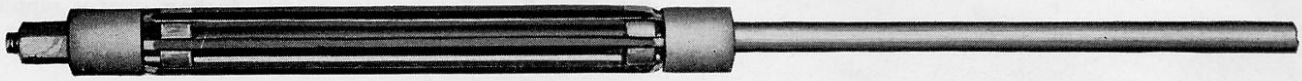
VALVE GUIDE EXPANSION REAMERS

C-249 Size 11/32". For all 1947, '48, '49, '50, and 1951 Kaiser and Frazer cars. Also all 1951 six cylinder Henry "J" models.

C-38 Size 3/8". For all 1951 four cylinder Henry "J" models.

Efficient control of oil economy is often dependent on accurate fitting of the valve guides. These reamers allow accurate reaming of both the intake and exhaust valve guides with the same reamer, because they can be adjusted to exactly the specified size. Spiral flutes help assure a smooth, accurate finish even when used by an unskilled mechanic. Their low cost makes it possible for even a small shop to have several.

ADJUSTABLE VALVE GUIDE CLEANERS

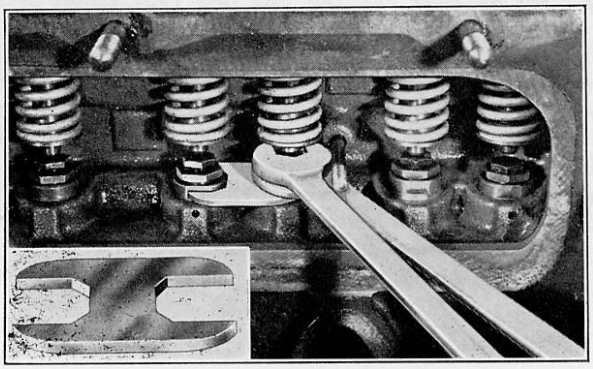


With Reversible Replacement Blades

C-756 For 5/16" to 7/16" I.D. Guides

C-766 For 7/16" to 5/8" I.D. Guides

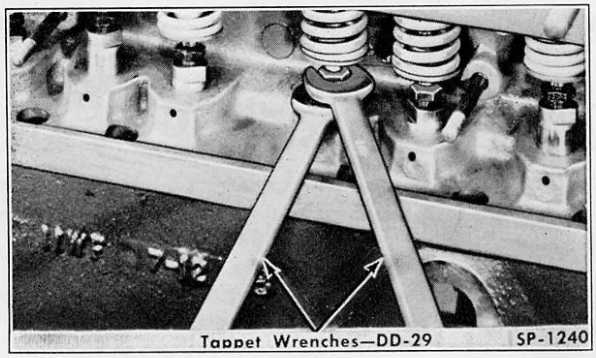
Here is a better valve stem guide cleaner — fast, efficient and inexpensive. Removes all carbon and gum without removing metal. Leaves a fine polished finish. Blades are reversible and can be replaced at low cost.



VALVE TAPPET HOLDER

KF-30 For 1947 and 1948 Kaiser and Frazer cars.

Two adjoining tappets can be locked together with this simple tool, that merely drops in place. This saves handling a third wrench usually necessary to hold the tappet while adjusting and locking the valve tappet screw.



Tappet Wrenches—DD-29 SP-1240

LONG HANDLED TAPPET ADJUSTING WRENCHES

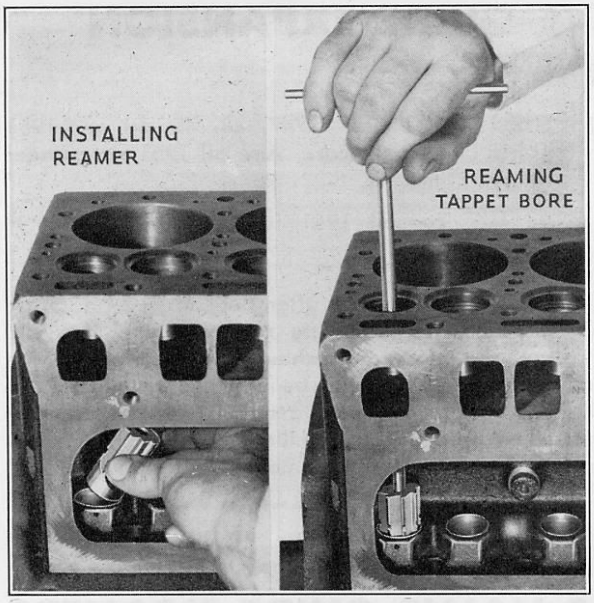
DD-29 Size 1/2".

KF-35 Size 7/8".

KF-36 Size 3/4".

KF-37 Size 9/16".

Mechanics prefer these long wrenches for they help avoid burned knuckles that often are the result of trying to use ordinary short wrenches. The milled openings are accurately machined to size to provide a full fit and eliminate rounding off the tappets or adjusting screw and lock nut.



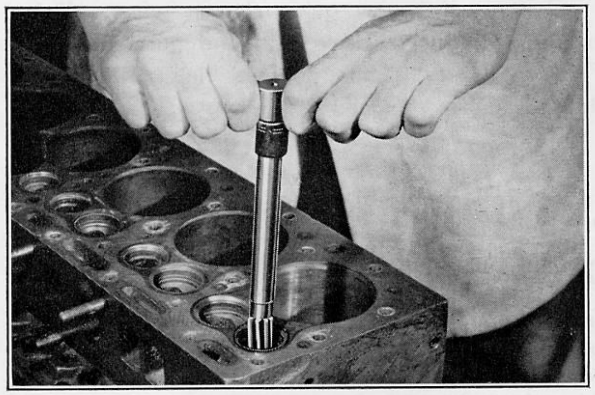
VALVE TAPPET REAMER SETS

KF-52 Set includes .002", .005", and .008" oversize cutters, also long and short pilot handle drivers. For all 1947, '48, '49, and 1950 Kaiser and Frazer cars.

KF-137 Set includes .002" and .005" oversize cutters, also long and short pilot handle drivers. For all 1951 Kaiser and Frazer cars.

Owners of KF-52 need order only SP-1266. .002" oversize cutter and SP-1267 .005" oversize cutter. Pilot handle drivers of KF-52 Set fit these cutters and service 1951 cars.

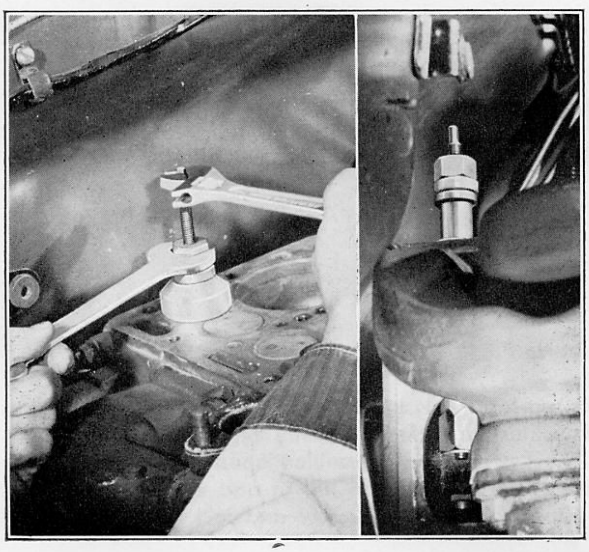
Elimination of noisy tappets often requires the installation of oversize valve tappet bodies. In order to install them, the engine block must be carefully reamed with the special reamers contained in these sets. Reamers are of the solid, piloted type and, consequently are easily used by any semi-skilled service man. The solid pilot end of reamer should be entered in old hole, as shown, allowing it to pilot the fluted portion of the reamer. Use progressively to reach oversize desired. Drive handles pilot in valve guide. A short pilot is supplied for servicing the tappets close to the dash.



VALVE GUIDE BORE REAMER

KF-57 For all 1947, '48, '49, '50, and 1951 Kaiser and Frazer cars.

Before the oversize outside diameter valve guides can be properly installed, the engine block should be accurately reamed with this special solid reamer. The diameter of this reamer allows just the designed press fit specified by the factory engineers. One reamer services both intake and exhaust valve guides. Do not confuse this reamer with those required for reaming the inside diameter of the valve guide — see previous page for this type of reamer.



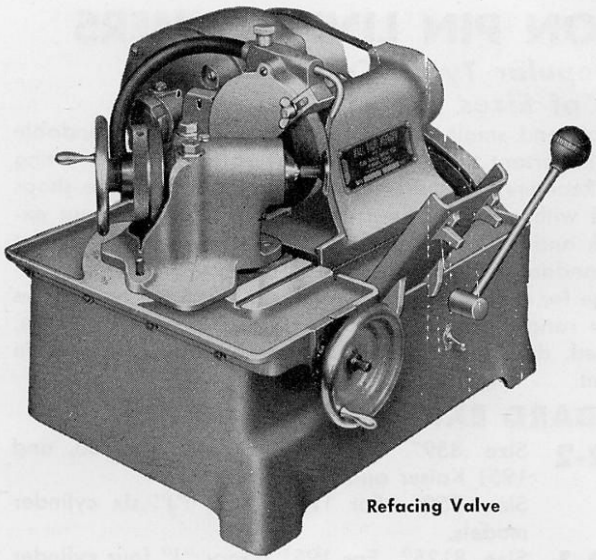
VALVE GUIDE REMOVER AND INSTALLER

(Puller Type)

KF-27 For all 1947, '48, '49, '50, and 1951 Kaiser and Frazer cars.

Removes And Installs All Guides Including Those Next to Dash

The limited space available between the top of the engine block and the recess in the dash prevent removing or installing valve guides with drivers like DD-849 shown on Page 55. Strong, easy-to-use puller screw draws out old guide and pulls in a new one with a minimum of effort. A special angle aligning plate compensates for valve angle.



Refacing Valve

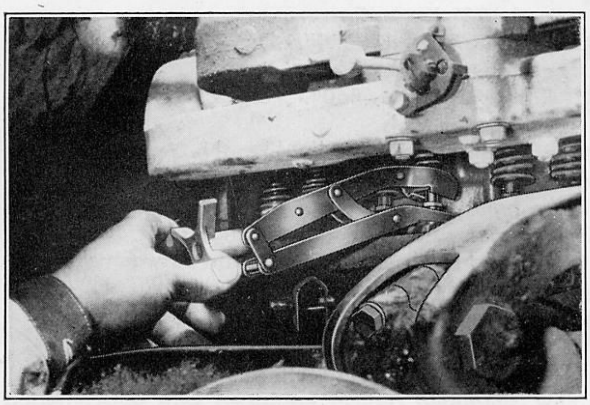
WET TYPE VALVE REFACER

MH-80 Complete with one standard 4½" diameter X ½" grinding wheel also standard and 90° diamond dressers with 1/3 H.P. 110 volt equipped 60 cycle AC motor. Collet range accommodates 9/32" to 9/16" diameter valve stems. Other collets and adapters available. Services V Type engines. Provide your shop with one of these wet type valve refacers and you assure greater precision and a superior valve finish with longer more dependable grinder life. Trouble free pump and 5 pint pump capacity provides ample cooling capacity.

V belt drive provides smooth vibrationless power which is just one of the reasons this grinder turns out a superior finish on valves up to 5" in diameter. Spindle is mounted on ball bearings carefully protected from dust and abrasive.
Workhead is adjustable for 30°, 45° and 90° valves. Quick acting clutch permits operator to stop workhead to inspect work without stopping motor. Dovetail type way with spring loaded gib provides automatic take up for wear.

GRINDS VALVE STEM ENDS, TAPPETS AND ROCKER ARMS

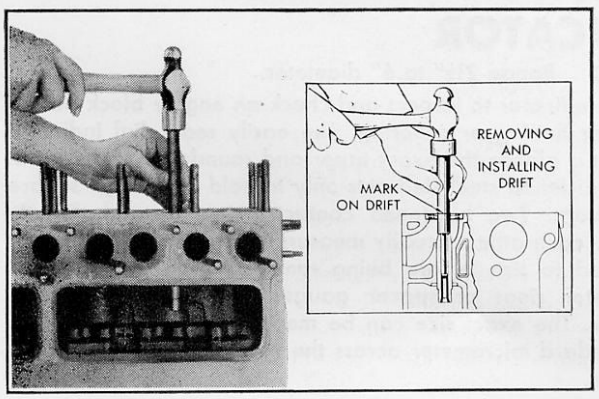
Attachments are available for either flat or crown-grinding of valve stem ends. A depth gauge can also be obtained to provide for accurate grinding of the valve stem to the proper length as required on some makes of engines. An attractive combination metal work bench and cabinet that will accommodate both this valve refacer and valve seat grinder is also available. It will add utility and merchandising appeal to your valve service department — write for illustrated folder.



VALVE SPRING LIFTER

C-482 For all 1947, '48, '49, '50, and 1951 Kaiser and Frazer cars. Also all 1951 Henry "J" models.

Limited clearance makes it difficult to use other types of valve spring compressors. This low-cost lifter with its screw-type control, however, is an easy-to-use, safe design that helps avoid burned knuckles and lost time. Fits most all makes of popular "L" head engines.



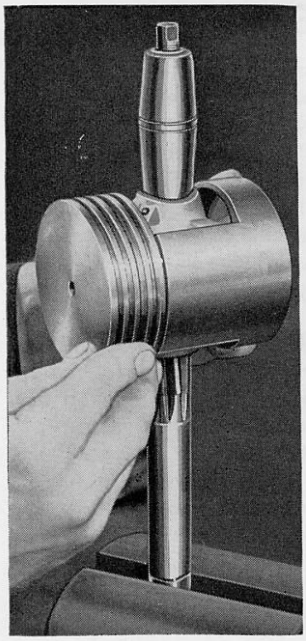
VALVE GUIDE REMOVING AND INSTALLING DRIVERS

DD-849 For all 1947, '48, '49, '50, and 1951 Kaiser and Frazer cars. Size 11/32".

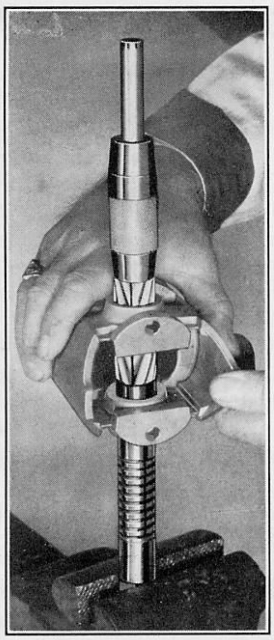
W-177 For 1951 four cylinder Henry "J" models. Size ⅜".

W-215 For 1951 six cylinder Henry "J" models. Size 11/32" special.

Removing worn valve guides is a fast simple job when your shop is equipped with these inexpensive drivers. A specially machined driving shoulder and pilot protects a new guide from being damaged during installation. Always check the height of one of the old valve guides and mark the handle of the driver as indicated in illustration at left, to provide accurate location of the new guides.



Standard, Spiral Flute Expansion Type Reamer



Adjustable — Spiral Flute — Replaceable Blade Type Reamer—
See Page 58 for full details.

PISTON PIN LINE REAMERS

Two Popular Types Offer Full Range of Sizes For All Models

Both large and small service shops find sharp, dependable reamers important time savers for accurate piston pin fitting service. Reamers like these usually save time for large shops equipped with power honing machines by roughing out excess stock and reducing honing time to a minimum.

The standard expansion reamer offers accuracy with limited range for minimum cost. The adjustable blade type offers maximum range, accuracy and fine finish, plus replaceable, high speed, dual spiral blades at only a modest increase in investment.

STANDARD EXPANSION TYPE

DD-82-2 Size .859". For all 1947, '48, '49, '50, and 1951 Kaiser and Frazer cars.

C-26 Size .750". For 1951 Henry "J" six cylinder models.

DD-82-1 Size .8125". For 1951 Henry "J" four cylinder models.

This type of reamer uses a screw-in type tapered plug to expand the cutting flutes so one size reamer will dependably size holes from .003" under its specified range to approximately .015" over this size. It will produce a maximum of service for a minimum investment.

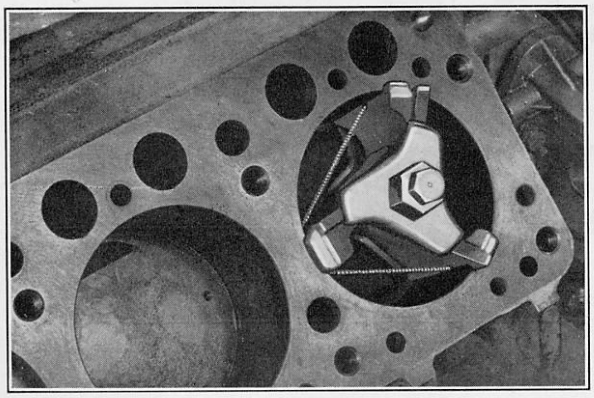
ADJUSTABLE BLADE TYPE

85-AS Range .850" to .900". For all 1947, '48, '49, '50 and 1951 Kaiser-Frazer cars.

75-AS Range .750" to .800". For 1951 Henry "J" six cylinder models.

81-AS Range .810" to .860". For 1951 Henry "J" four cylinder models.

Piston fitting specialists especially like this reamer for the blades are expanded over their full length providing a longer bearing in the hole being reamed. The dual spiral flutes provide a simultaneous cutting and burnishing effect. Blades are made of high-speed steel providing long life between sharpenings. See page 58 for additional details.

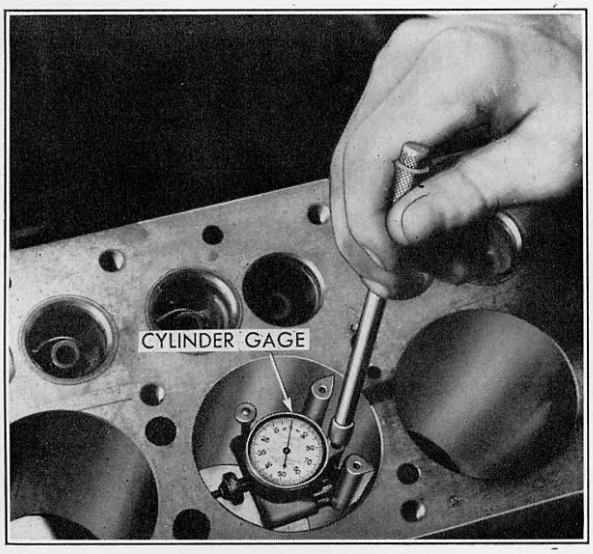


CYLINDER RIDGE REAMER

C-3012 Range 2 9/16" to 4 3/4" diameter.

This is a new, simplified reamer equipped with self-centering jaws that can be used safely and accurately by even a novice mechanic.

It is fitted with a special short carbide cutter especially designed to avoid bellmouthing the cylinder bore which might expose the top piston ring to full heat of combustion. Allows ridge removal progress to be inspected without removing reamer from bore. Cuts both iron blocks and steel sleeves.



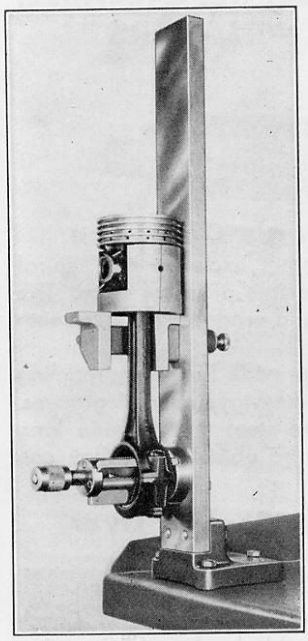
CYLINDER BORE TEST INDICATOR

C-119 Range 2½" to 6" diameter.

Use this indicator to inspect and check an engine block before and after honing or reboring. The easily read dial indicator shows at a glance the exact taper and roundness of the bore.

The hardened steel sled acts only to hold the gauge square in the bore. Two hardened contact points located directly opposite each other actually measure the bore. Indicator may be locked to size before being removed from the bore.

No master rings or spacer gauges are needed with this indicator. The exact size can be measured and checked with any standard micrometer across the two contact points of the indicator.



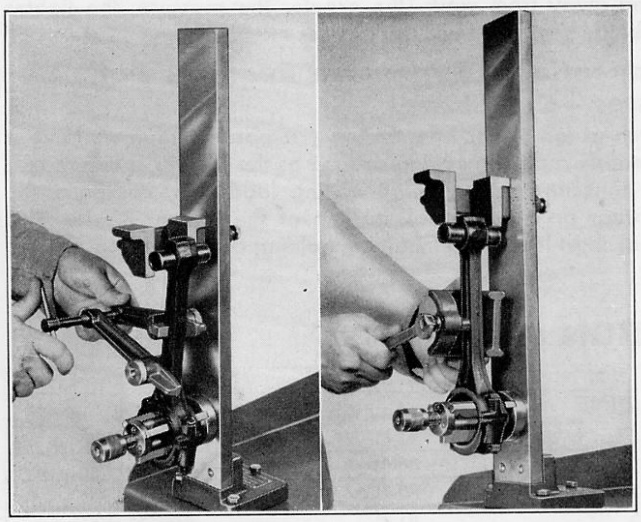
CONNECTING ROD ALIGNER

C-841 Complete with Bending and Twisting Tools. For All cars. Range 1½" to 2⅝".

A fast aligner for all automotive service — makes every necessary test and allows straightening of every type of connecting rod and piston assembly in less time than usually required by other types of rod aligners.

Checks from top, bottom, and side of pin or piston, for twist, bend and offset on all types of piston and connecting rod assemblies, including tapered, cam ground or cut-away pistons. The sliding test bracket has three accurately ground faces at top, bottom and one side, and slides up and down the ground face plate in perfect alignment.

Expanding arbor allows fast, accurate adjustments and will fit connecting rod bearings from 1½" to 2⅝" dia. Additional adapters are available to increase this range to 3⅛" dia.

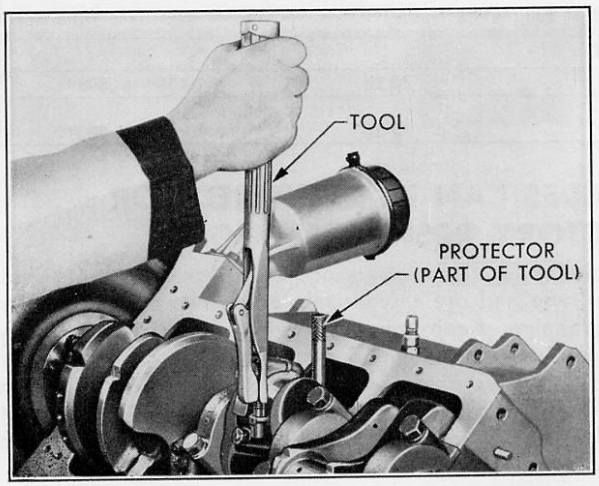


TWISTING BENDING

CONNECTING ROD BENDING AND TWISTING TOOL SET

C-711 Tool set only for use with most any make aligner.

This handy set of connecting rod straightening tools which is included with the C-841 aligner may be purchased separately and can be used with most any make of rod aligner. The twisting fixture, consisting of two opposed levers, is shown being used at left. There is no need to guess the amount of twist required because the connecting rod fixture gauge always indicates the point of perfect alignment. The bending tool, shown in the right hand illustration, has a powerful pressure screw that imposes no strain on rod aligner but quickly corrects a bent connecting rod without removing the rod from the aligner.



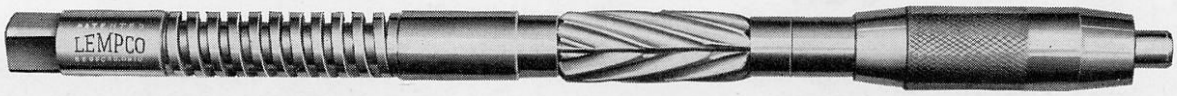
PISTON AND CONNECTING ROD REMOVING AND INSTALLING TOOL

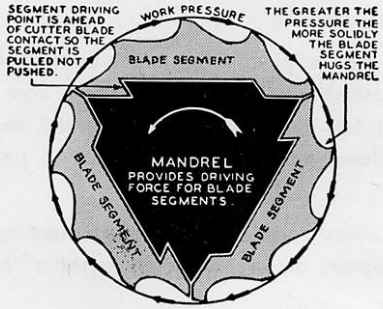
C-3047 Complete with protector stud for all engines.

Tool clamps onto connecting rod cap screw and protector sleeve fits onto opposite cap screw. This makes it easy for one mechanic to guide the connecting rod and piston assembly onto the crankshaft journal. Especially helpful on V engines where two rods fit each throw of crankshaft. The C-771 Engine Turning Tool saves time by turning engine over with starter ring gear teeth.

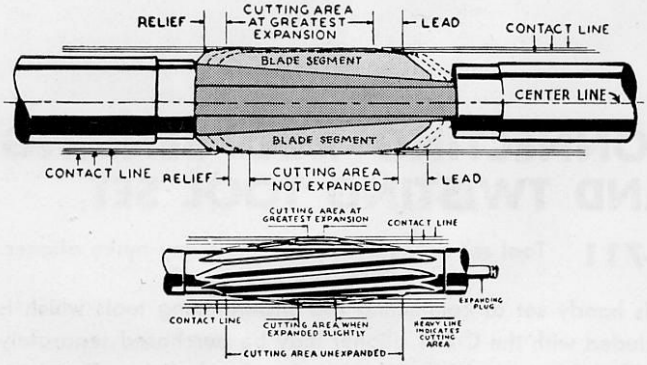
For PISTON PIN FITTING
KING PIN BUSHINGS
PITMAN SHAFT BUSHINGS
(See chart below)

DUAL SPIRAL, ADJUSTABLE, REPLACEABLE, HIGH SPEED STEEL BLADE — REAMERS




SEGMENT DRIVING POINT IS AHEAD OF CUTTER BLADE CONTACT SO THE SEGMENT IS PULLED NOT PUSHED.
WORK PRESSURE
THE GREATER THE PRESSURE THE MORE SOLIDLY THE BLADE SEGMENT HUGS THE MANDREL
BLADE SEGMENT
MANDREL PROVIDES DRIVING FORCE FOR BLADE SEGMENTS.
BLADE SEGMENT
BLADE SEGMENT

NOTE THAT THE MANDREL DRIVES THE BLADES
Note how cutting contact is maintained at any expansion.



Note how ordinary expansion reamer has constantly shortening contact as reamer is expanded.

Cuts And Burnishes In Single Operation

Cross Section of reamer at left shows exclusive dual spiral design which sweeps cutting surface free of metal chips. This eliminates scratching and gouging and produces a full, smooth bearing surface quickly and easily.

Right and left hand spiral flutes provide fast, easy reaming even in solid or split bushings with keyways and oil grooves.

Blades are made of hard chrome steel that provide long efficient blade life. Extra life can be obtained as they can be resharpened three to five times.

Provides Constant Cutting Contact Over Entire Length Of Blade — AT ANY EXPANSION

You'll turn out perfect work faster with these reamers! Check sketch at left and see how reamer blades have full cutting contact in any size hole. This distributes wear over entire blade providing longer reamer life. Blade cannot flex and spring away from work—the greater the pressure, the tighter the blade segment hugs the reamer mandrel.

Conventional Expansion Reamers Dull Faster — Cut Slower

Sketch at left shows how ordinary expansion reamers have a constantly reducing cutting surface as the reamer is expanded. This concentrates the entire cutting load and, consequently, the wear on a very small portion of the reamer blade. This means short life and difficulty in holding dimensions on difficult jobs.

REAMER APPLICATION CHART

MAKE OF CAR	YEAR	MODEL	REAMER NO.	EXTRA BLADES	REAMER RANGE
			PISTON PINS	AS = short pilot	SL = long pilot
Kaiser	all	all	85-AS	85-BL	.850" to .900"
Frazer	all	all	85-AS	85-BL	.850" to .900"
Henry "J" 6 cyl.	1951	514	75-AS	75-BL	.750" to .800"
Henry "J" 4 cyl.	1951	513	81-AS	81-BL	.810" to .850"
			STEERING GEAR HOUSING ROLLER SHAFT BUSHINGS		
Kaiser—Frazer Henry "J" 6 and 4 cyl.	all	all	109-SL*	109-BL	1.090" to 1.145"
*This Reamer Also Popular For King Pin Service on Ford, Chevrolet, Int. Harv., Dodge, Reo, White Trucks.					
			KING PIN		
Kaiser-Frazer	1948	all	75-SL	75-BL	.750" to .800"
Henry "J" 6 and 4 cyl.	1951	all	75-SL	75-BL	.750" to .800"

Reamers will adjust to approx. .004" under minimum specified.

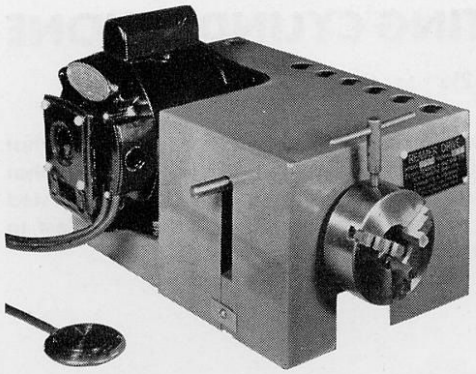
EXTRA BLADES AND PILOTS AVAILABLE SEPARATELY

You can obtain double duty from most of these piston pin reamers by ordering an SL (long) pilot and thereby adapting it to ream king pin bushings.

Consideration should also be given to ordering an extra set of blades to keep your reamer in service when the original blades are sent back to us for resharpening.

BLADES CAN BE RETURNED FOR FACTORY RESHARPENING

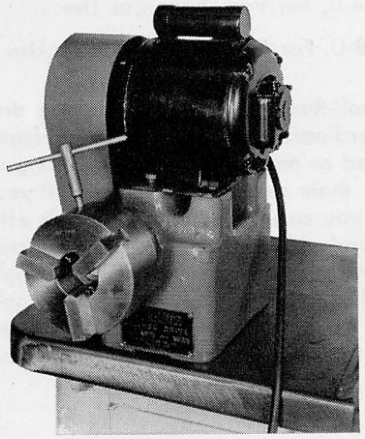
All blades for the reamers are of a three segment, dual spiral type and are replaceable as well as serviceable by resharpening. Keep your reamer in operation by ordering an extra set of blades and return the originals when they are dull, for resharpening. Prompt resharpening service to factory specifications is available at only $1.50 per set of blades. Blades can usually be sharpened three to four times.



LOW-COST REAMER DRIVE

C-3090 Capacity up to 1¼" Dia. Reamers.

Shops demanding the maximum in versatility and dependability while holding their investment to a minimum will find this reamer drive the answer to their requirements. Equipped with universal, scroll type, three jaw chuck, ¼ H.P. drive motor and foot operated control switch. Worm and gear reduction unit is ball bearing equipped for smooth long life. Main spindle feed is 75 R.P.M. — side power take-off 1725 R.P.M.



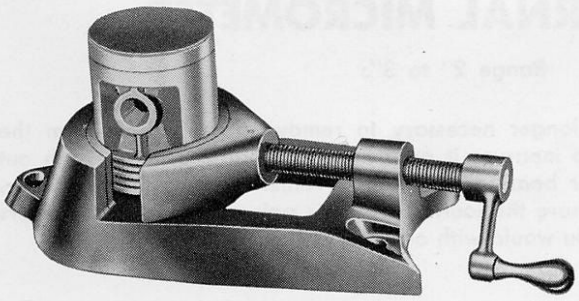
HEAVY DUTY REAMER DRIVE

C-3091 Capacity all reamers from ⅛" to 1½" Dia.

Busy shops with minimum floor space like this rugged compact drive. Operates at 25, 45 and 75 R.P.M. providing the most efficient reaming speed for every job. Vibrationless operation at all speeds is assured by ball bearing mounted worm and drive gear powered with ¼ H.P., 1725 R.P.M. motor. Three jaw self-centering chuck and foot operated control switch make it easy and fast to fit piston pins and perform other profitable reaming operations.

RECOMMENDED REAMER SPEEDS

½" to ¾" Dia. Reamers	70 to 100 R.P.M.
¾" to 1" Dia. Reamers	40 to 50 R.P.M.
1" and larger Dia. Reamers	20 to 30 R.P.M.



PISTON VISE

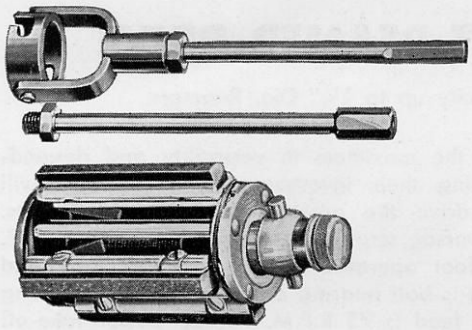
C-3092 Capacity up to 5½" Dia.

Every piston fitting department needs one or more fast operating piston vises like this. Soft metal lined jaws prevent damage to finished piston yet safely hold any size piston up to 5½" dia. in a firm non-slip grip. Crank type screw handle speeds up clamping operations. Ruggedly constructed for years of daily use.

PISTON PIN VISE

C-3093 Accommodates all sizes including those with straight and tapered bores.

A handy specialized pin vise such as this will speed up the fitting of piston pins. Piston pin is held securely and can't slip or skid, or become scratched or scuffed. Safely holds all sizes of pins without distortion. Mount one on the bench next to your reamer drive and another beside your honing machine.



FAST CUTTING CYLINDER HONE

C-823 Range 2½" to 4⅛".

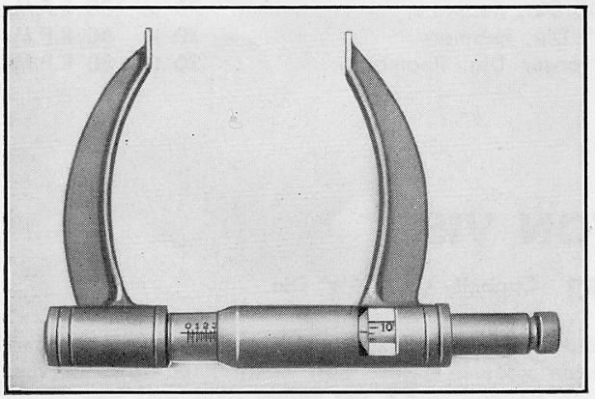
Model 500 is a self-lubricating fast cutting type hone that eliminates flying dust and produces a mirror-like finish that assures longer piston ring wear. This one hone can be adjusted over a wide range so that it will service from the smallest to some of the largest bore truck engines.

ROTARY ELECTRIC IMPACTOOLS

MT-281 Model 4-U, For Passenger Car Use.

MT-282 Model 8-U, For Car and Light Truck Use.

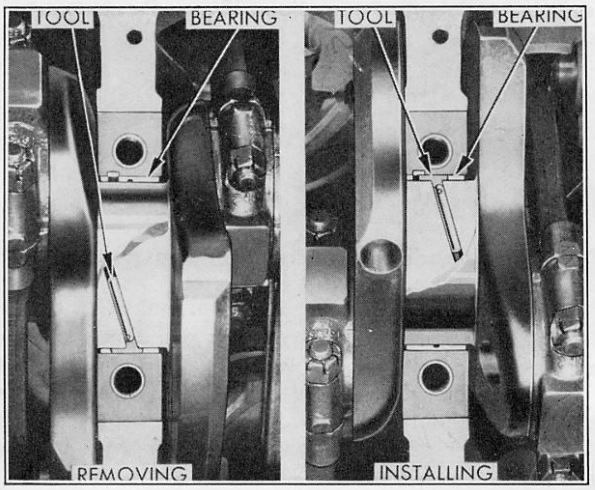
These powerful Ingersoll-Rand Impactools take the drudgery and effort out of an ordinarily long job such as removing an oil pan, a cylinder head or mounting and demounting wheels. Many mechanics own their own impact tools — if your men don't have such tools you can increase your shop's efficiency and lower your costs and still increase your men's earnings by equipping them with these amazing labor-saving power tools. Most mechanics are glad to repay the cost of such tools from their regular income. Write for special catalog page F-597 describing how these tools can reduce service time and costs for you.



CRANKSHAFT BEARING JOURNAL MICROMETER

C-801 Range 2" to 3".

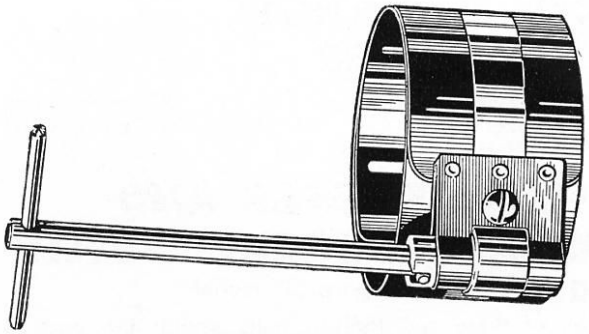
It is no longer necessary to remove a crankshaft from the engine to measure it accurately for main bearings. Push out the upper bearing shell with a Miller bearing shell remover, and measure the journal with this pair of special micrometers just as you would with ordinary "Mics."



MAIN BEARING UPPER SHELL REMOVING AND INSTALLING TOOL

KF-8 For all 1947, '48, '49, '50, and 1951 Kaiser and Frazer cars. Also 1951 six cylinder Henry "J" models.

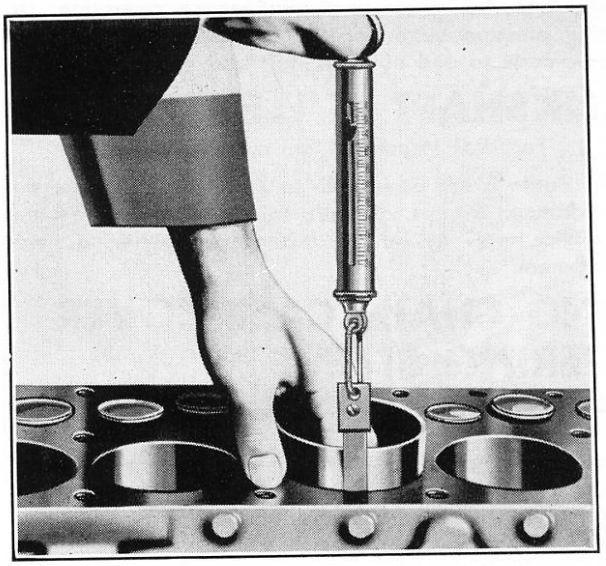
Every shop should have several of these tools. They drop in the oil hole of the crankshaft and as the shaft is slowly turned the self-aligning head of the tool pushes the bearing half, in or out of position. Do not use a nail — it may drop into oil hole or crankshaft or nick bearing shell.



UNIVERSAL PISTON RING COMPRESSOR

C-385 For All cars — Range 2½" to 5" Dia.

Every efficient engine repair and overhaul department needs several of these low cost wrap-around ring compressors. Their use avoids unnecessary piston ring breakage as the piston assembly is entered into the block. Multiple piece rings are easily installed without distortion or breakage with this tool. Be sure rings are fully entered in piston ring groove before completely tightening compressor.



PISTON FITTING GAUGE AND SCALE

C-690 For All cars.

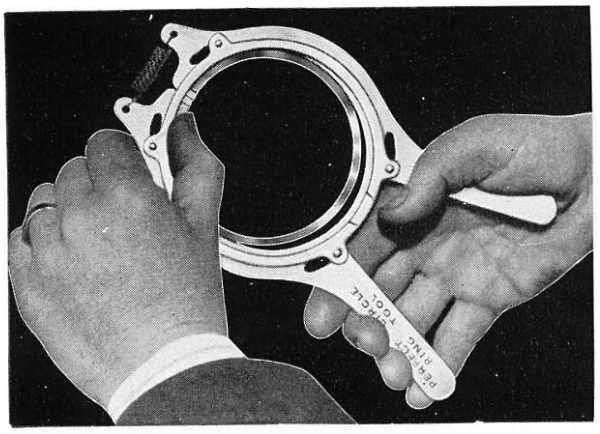
Accurate, uniform fitting of pistons in the cylinder bore according to factory specifications requires this dependable brass 20 lb. pull scale. It is calibrated in 4 oz. graduations and fitted with .0015", .002" and .003" thickness gauges which are gripped with a simple clamp. This clamp does not require re-inforced pull-eyelet in the thickness gauge stock.

EXTRA THIN FEELER STOCK AVAILABLE

Because of the ever increasing need of .0015" and .002" stock for special checking requirements, we now list this stock separately:

C-3100 — .0015" x ½" wide feeler stock 3 foot lengths Min.

C-3101 — .002" x ½" wide feeler stock 4 foot lengths Min.



PISTON RING INSTALLING AND REMOVING TOOLS

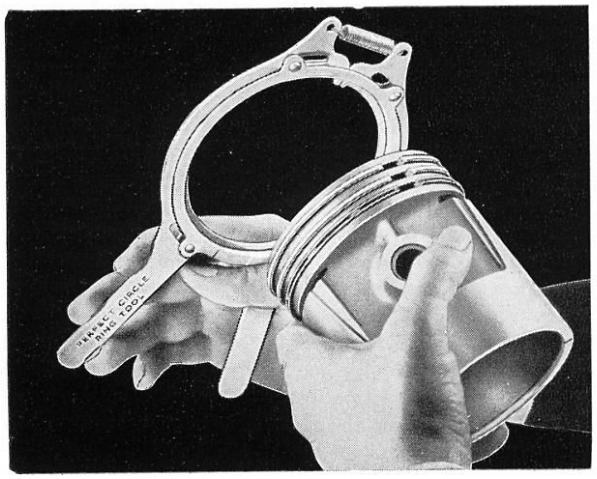
C-389 Set of 10 Tools (Specify sizes)

C-390 Set of 5 Tools (Specify sizes)

C-674 Contains 4 Sizes—3⅛", 3¼", 3⅜" and 3⁷⁄₁₆"

AVAILABLE IN THE FOLLOWING SIZES:

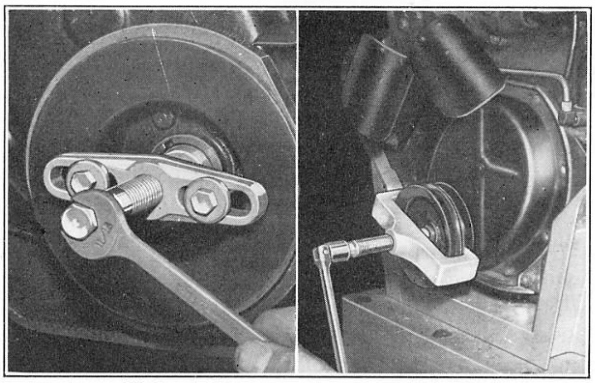
C-518	2¹¹⁄₁₆"	**C-466**	3⅛"	**C-469**	3⁷⁄₁₆"
C-519	2¾"	**C-259**	3⅛"	**C-262**	3½"
C-264	2⅞"	**C-467**	3³⁄₁₆"	**C-263**	3⅝"
C-520	2¹⁵⁄₁₆"	**C-260**	3¼"	**DD-872**	3¾"
C-266	3"	**C-468**	3⁵⁄₁₆"	**C-3046**	3¹³⁄₁₆"
		C-261	3⅜"	**C-521**	3⅞"



New piston rings that have been distorted by over expansion while being installed on the piston have been proven by dynamometer tests to be less efficient than the old worn rings that are being replaced. Tools like these are designed to prevent over expanding the ring, yet allowing ample expansion for fast easy removal or installation.

Actual ring breakage is prevented through the use of these tools even on special thin sectional oil rings.

Equip your shop with a full set of these tools to accommodate all the various sizes of rings regularly serviced.



KF-31 W-175

ENGINE VIBRATION DAMPER PULLER

KF-31 For all 1947, '48, '49, '50, and 1951 Kaiser and Frazer cars. Also 1951 Henry "J" six cylinder models.

CRANKSHAFT GEAR AND CAMSHAFT SPROCKET PULLER

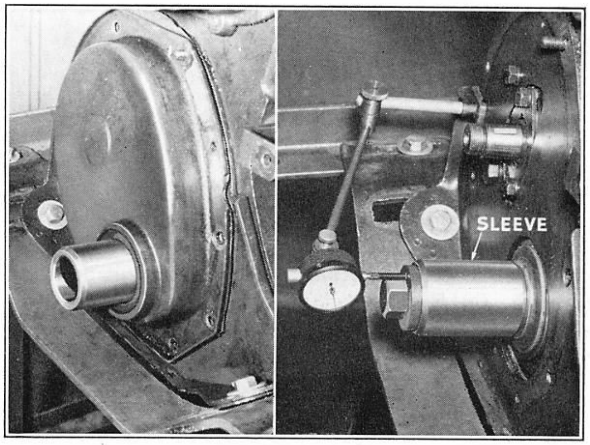
W-172 For all 1951 Henry "J" models.

The design of these two tools is quite similar but each is specifically adapted to its particular service operation. A free-turning pressure button on the end of the puller screw prevents damage to end of crankshaft and camshaft.

CRANKSHAFT PULLEY PULLER

W-175 For 1951 Henry "J" four cylinder models.

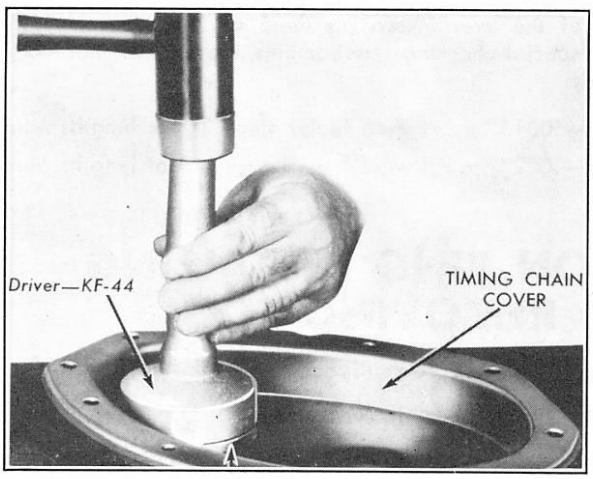
The KF-31 Puller is not adaptable to this engine because no vibration damper is used. Be sure to complete your engine special service tools by adding this rugged puller to your shop equipment.



TIMING CHAIN CASE COVER CENTERING SLEEVE

KF-28 For all 1947, '48, '49, '50 and 1951 Kaiser and Frazer cars.

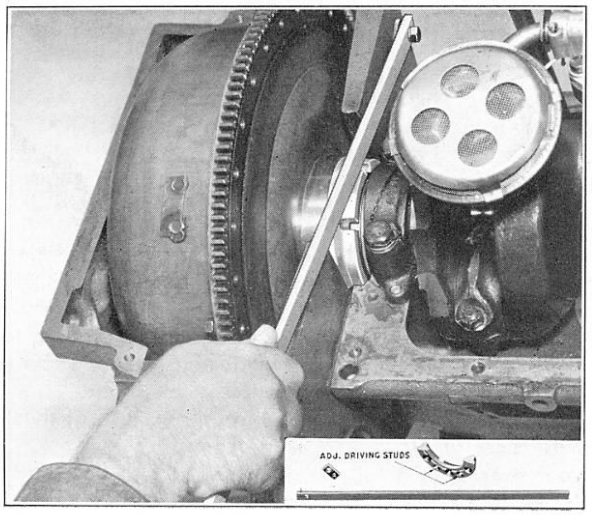
Costly and annoying oil leaks at timing case cover oil seal can often be eliminated through the use of this slip-on sleeve. It properly centers the cover on the crankshaft while the cover is being bolted in position. It is also used as shown when checking crankshaft end play.



TIMING CHAIN CASE COVER OIL SEAL INSTALLING DRIVER

KF-44 For all 1947, '48, '49, '50, and 1951 Kaiser and Frazer cars.

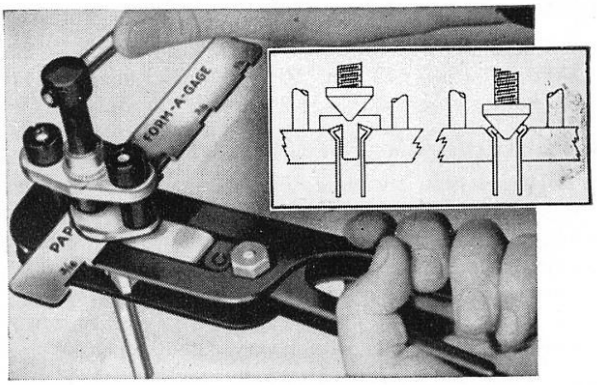
Possible distortion of the timing case cover can be easily eliminated by properly installing a new seal with this special driver.



REAR BEARING OIL GUARD ASSEMBLY REMOVER AND INSTALLER

KF-103 For all 1951 Kaiser and Frazer cars equipped with standard or K-50 and K-51 Hydra-Matic Transmissions.

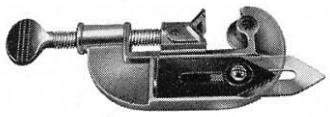
Much time and extra effort can be saved through the use of this special tool. A half round section of the tool pushes the oil seal guard out of the cylinder block as the crankshaft is rotated by hand using tool C-771. The lever maintains pressure on the half round section making it easy to start. Holes drilled in half round section allow it to fit over the heads of the crankshaft bolts of cars equipped with standard transmissions. This provides a means of turning this part of the tool as the engine is rotated. Two threaded driving lugs are provided in tool to engage the crankshaft on cars equipped with Hydra-Matic transmissions. A new oil seal guard is installed in a similar manner without the need of removing crankshaft or rear main bearing cap. Can be used with engine in, or out of chassis. See Kaiser-Frazer shop manual for complete details.



STEEL AND COPPER TUBING FLARING TOOL

C-804 Flaring Tool For Single and Double Flares on ½" - ⅜" - 5/16" - ¼" and 3/16" Tubes.

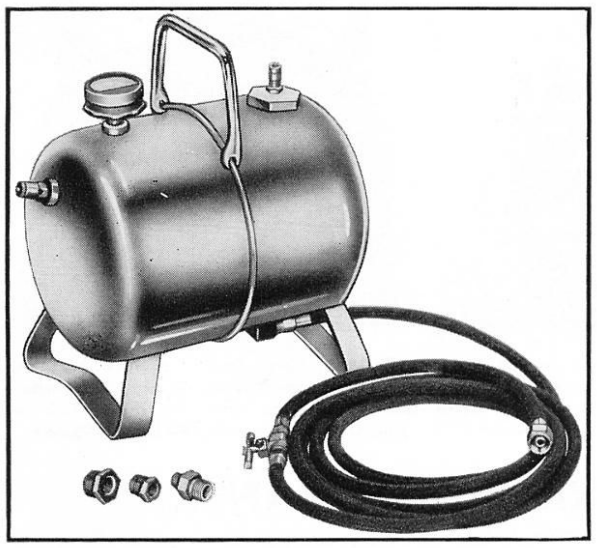
Safe, dependable, flared connections can be made quickly through the use of this easy-to-use portable hand tool. This means you can make replacement fuel, oil and brake lines from bulk tubing stock. Eliminates the need of stocking a number of different made-up lengths.



STEEL AND COPPER TUBING CUTTER

C-873 Tube Cutters, For All Automotive Uses.

Be sure and include this fast-acting cutter when you order your C-804 Flaring Tool. Acts on sample principle as large pipe cutters. Each tool fitted with deburring attachment.

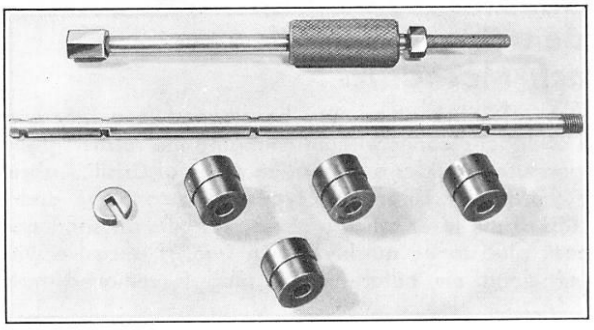


ENGINE BEARING WEAR DETECTOR TANK

C-776 Complete with fittings, hose, pressure gauge, etc. For All Cars.

Use of this tank to check oil lines, worn bearings, leaking connections, etc. before tearing down an engine will be very helpful in correctly diagnosing excessive oil consumption. It is also very valuable to inspect an engine rebuilding job before final assembly to determine if cam and main bearings, etc. are being properly lubricated or if too much oil is being pumped by bearings. Tank is light, compact and supplies oil at a constant predetermined pressure to entire engine lubrication system.

Tank is used with engine oil pan removed and with engine turning over slowly with starter.

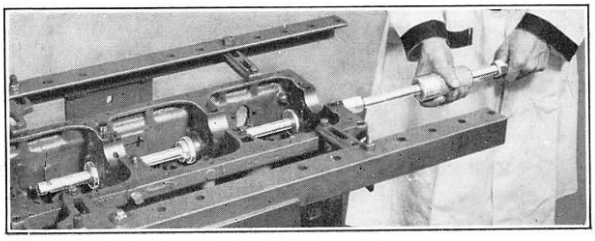


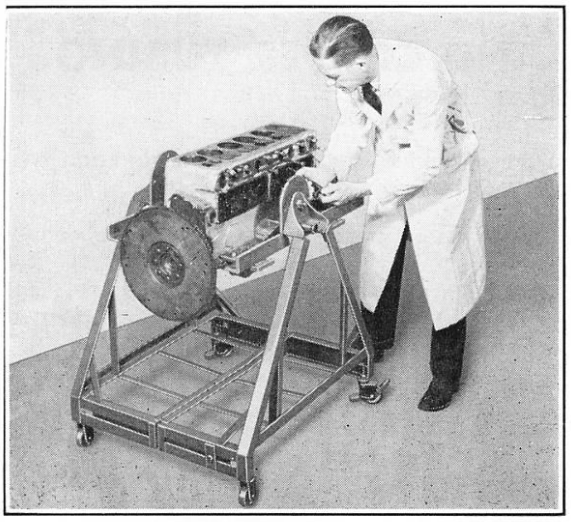
CAMSHAFT BEARINGS REMOVER AND INSTALLER

KF-4 For all 1947, '48, '49, '50, and 1951 Kaiser and Frazer cars.

The precision type, steel backed bearings used in these engines can be rapidly removed and replaced with this simple tool without danger of changing their size or marring their fine finish. Attempting to replace these bearings without such a special tool may not only deface their precision finish but cause burrs and swelling that may not allow the camshaft to be installed.

Puller is aligned by an adapter in a bearing on either side of bearing being serviced. This assures accurate alignment of new bearings, ready to receive the camshaft. These bearings do not require line reaming when properly installed.





Engine may be revolved through full 360° circle — will also hold engine with standard transmission attached.

ENGINE REPAIR STAND

KF-24 Complete with adapter sets KF-130 and KF-131. For all 1947, '48, '49, '50, and 1951 Kaiser, Frazer engines. Also all 1951 Henry "J" models.

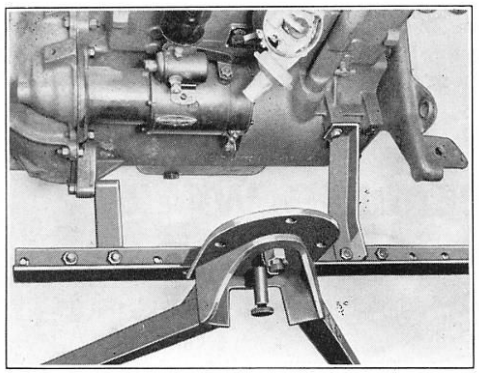
Adapters Available For Most All Engines

This is a universal type stand, easily adaptable to most all popular makes of engines weighing up to 600 lbs. Owners of earlier model stands can purchase adapters for any specific engine by merely specifying make and model of engine to be accommodated. The following adapters have been especially designed for owners of early model stands, who wish to adapt them to latest Kaiser, Frazer and Henry "J" engines.

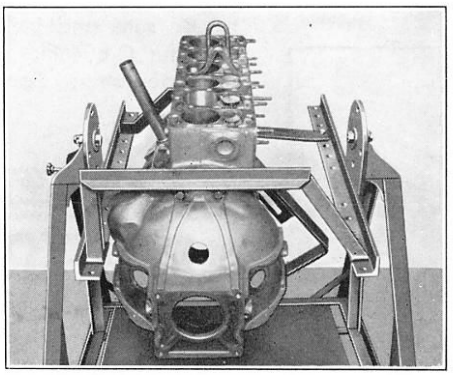
KF-130 Adapter set for all Kaiser and Frazer engines including 1951 models.

KF-131 Adapter set for all Henry "J" 4 and 6 cylinder engines.

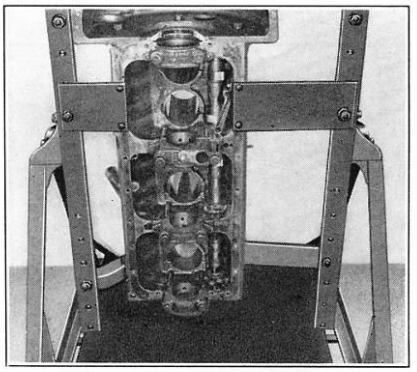
Each stand is equipped with two straight wheels and two swivel casters with safety lock.



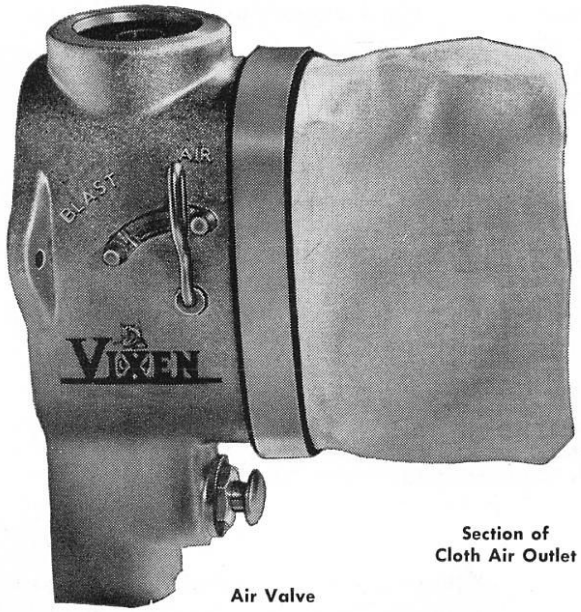
This illustration shows the KF-131 adapters holding a 4 cylinder Henry "J" engine. The Henry "J" 6 cylinder engine is very similarly held but with rear bracket inverted.



All 1951 Kaiser-Frazer engines except those equipped with Hydra-Matic transmissions are easily and securely held in the KF-24 stand with these parts of the KF-130 adapter set.



All 1951 Kaiser-Frazer engines including those equipped with Hydra-Matic transmissions can be held with the KF-130 engine stand adapters as illustrated above.



SPARK PLUG CLEANER

C-812 Complete with pkg. Abrasive.

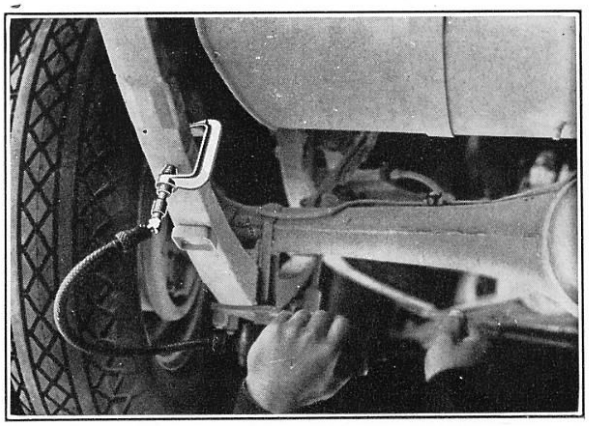
So Economical You Can Now Provide a Spark Plug Cleaner For Each Mechanic!

Various sizes of spark plugs may be cleaned in a jiffy with this small compact cleaner without changing the rubber grommet. Air pressure provides a vapor like spray of Crisilite abrasive that thoroughly cleans all types of automotive spark plugs. A flip of the lever on side of cleaner cuts off sand and allows spark plug to be quickly blown free of abrasive with a blast of clean air before spark plug is removed from cleaner.

CRISILITE—THE SELECTED CLEANING ABRASIVE

C-813 5 lbs. Crisilite Abrasive, Replacement Cleaner bag and adapter grommet.

Maintain the original efficiency of your Vixen spark plug cleaner by using Crisilite abrasive — the kind originally supplied with the C-812 cleaner.

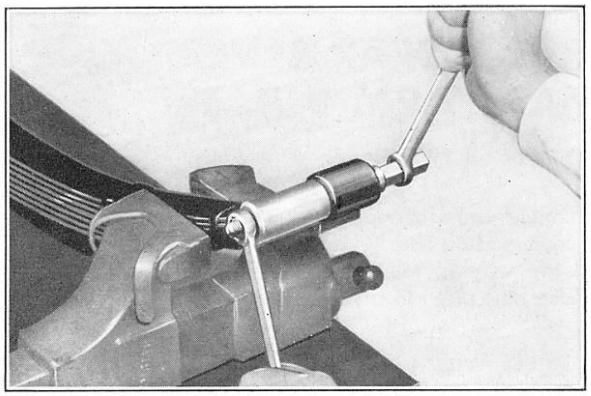


SPRING COVER LUBRICATING TOOL

C-408 For All Models with Metal Spring Covers

Springs equipped with metal covers need specialized lubrication — follow your car factory's instructions — use this special tool and the recommended lubricant. Special sharp plunger of tool pierces inner cloth cover and allows lubricant to directly contact spring.

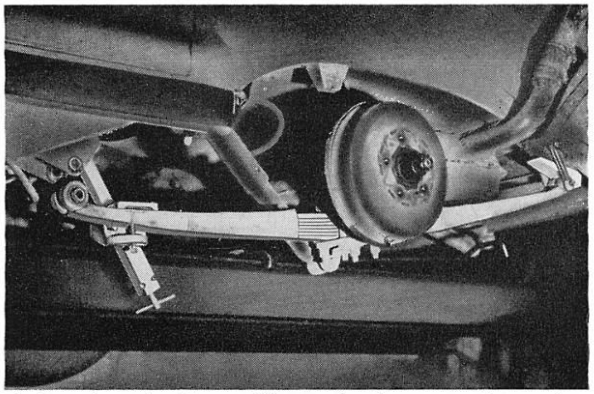
Standard angle Alemite fitting and 50 plugs for sealing lubricating opening in covers, supplied with each clamp. All parts for tool and additional plugs for lubrication openings available separately.



REAR SPRING, FRONT HANGER BUSHING REMOVING AND INSTALLING TOOL

KF-60 For all 1949, 1950, and 1951 Kaiser and Frazer cars.

Replacement of the rubber bushings in the spring is made a fast routine job when this tool is used. Proper size adapters fit behind each size of steel backed rubber bushings protecting the new parts as they are drawn into proper position. A ball bearing thrust bearing under the pressure nut reduces pulling effort to a minimum. Usually a new bushing can be drawn in place at the same time an old bushing is removed. Use new bushing next to old one to push old one from position. Be sure to oil puller screw threads liberally before using puller. Puller will then work easier and last longer.



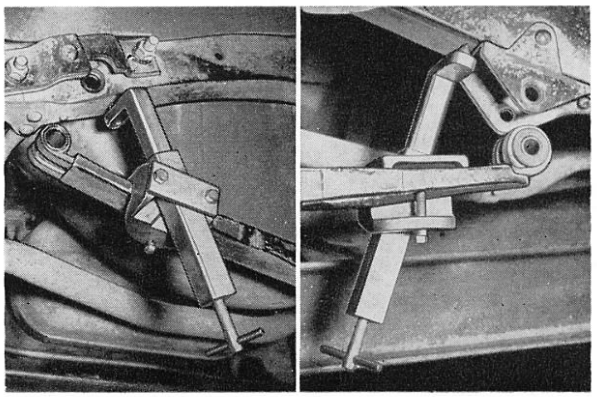
Block spring shackle as illustrated when removing spring hinge bolt.

SPRING JACK

C-3079 For all passenger cars. (Supersedes KF-117)

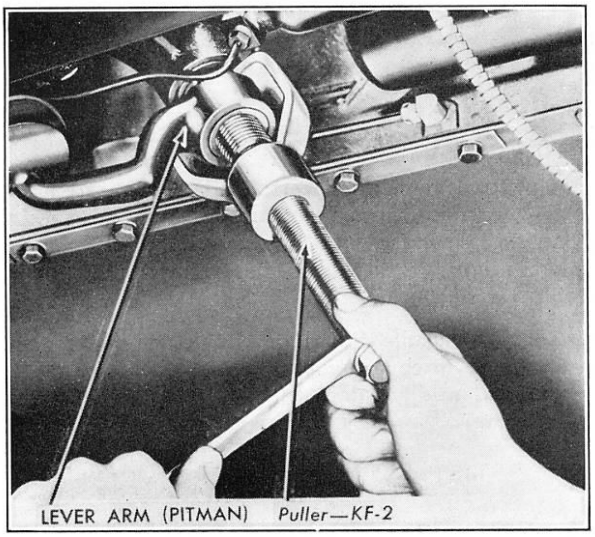
Eliminates Need Of Tying Up Hoist When Changing Shackle Pins And Bushings.

Save time and effort changing all types of spring shackle bolts by using this rugged tool to safely hold the spring in position as shown. Wooden block supplied with tool prevents spring from moving backwards as front of spring is jacked into position to remove and replace spring hinge bolt and bushings. Saves time and labor usually necessary to remove spring from car.



Jack Holds Spring In Alignment With Car Frame

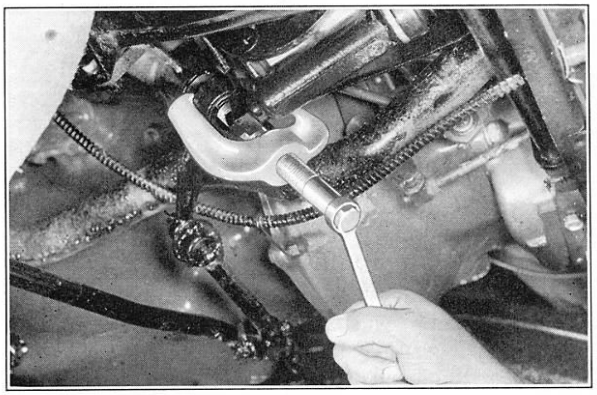
Jack clamps onto spring near shackle on inside or outside face of spring. Jack keeps spring and frame correctly aligned while shackle bushings are removed and replaced. Eliminates need of using car hoist or chain falls for replacement of shackle pins, bushings or spring hinge bolts.



STEERING GEAR LEVER (PITMAN) ARM PULLER

KF-2 For all 1947, '48, '49, '50, and 1951 Kaiser and Frazer cars.

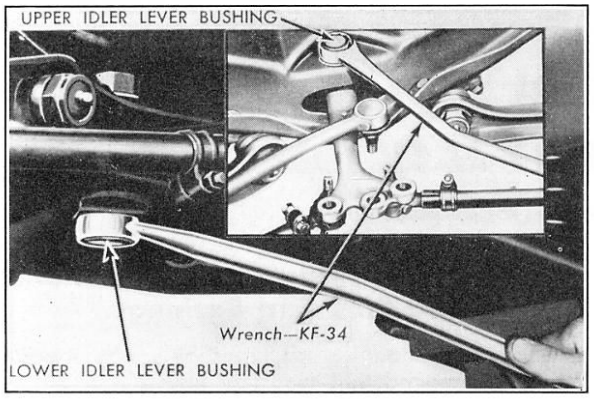
Driving the steering arm off the sector shaft with a hammer and punch often causes unnecessary damage to the steering gear housing and bearings. This special cast steel puller not only avoids the need of risking such damage but saves time and effort while removing many different types of steering arms.



STEERING GEAR LEVER (PITMAN) ARM PULLER

KF-119 For all 1951 Henry "J" models.

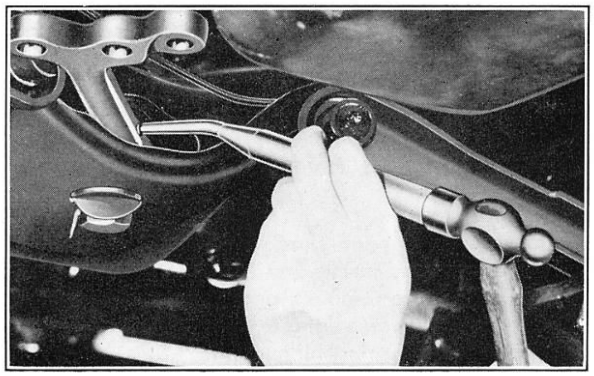
The very limited room around the Pitman Arm on these cars will not accommodate the KF-2 Puller. When the wheels are turned all the way to the left this special puller will easily drop in place and provide a safe, positive means of removing the arm.



STEERING GEAR IDLER LEVER BUSHINGS ADJUSTING WRENCH

KF-34 For all 1947, '48, '49, and 1950 Kaiser and Frazer cars.

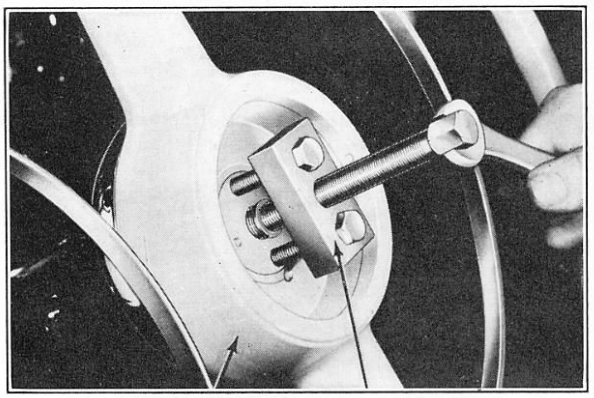
Front end alignment service men will save considerable time and effort through the use of this correctly curved wrench. Wrench fits both upper and lower bushings with car in normal running position.



STEERING IDLER LEVER LOCK PIN REMOVING AND INSTALLING DRIVERS (Pair)

KF-59 For all 1947, '48, '49, and 1950 Kaiser and Frazer cars.

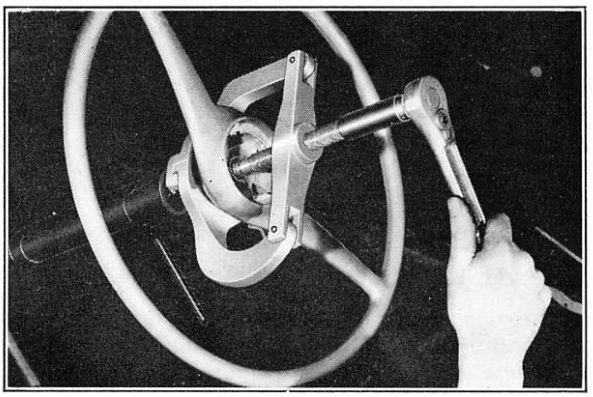
These drivers (one angle and one straight type) reach up through the front crossmember of the car frame, and make it easy to drive out the tapered pin that locks the steering control idler lever to the idler lever pin. They also are used to install these pins. The angle driver is shown in use at left.



STEERING WHEEL PULLER

KF-26 For all 1949, '50, and 1951 Kaiser and Frazer cars.

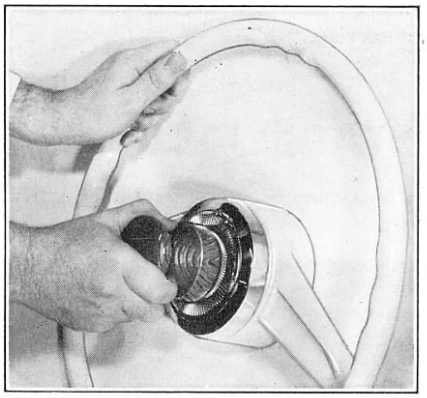
Use this special puller and safeguard your service customer's car against unnecessary marring usually caused by driving steering wheels off with a hammer and block of wood. You'll find this puller fits all the various spacings of tapped holes provided in the steering wheel hubs. Be sure to provide an extra puller like this to your new car delivery department so that steering wheels can be changed on new cars without damage to their custom finish.



STEERING WHEEL PULLER

C-232 For 1947 and 1948 Kaiser and Frazer cars. Also all 1951 Henry "J" models.

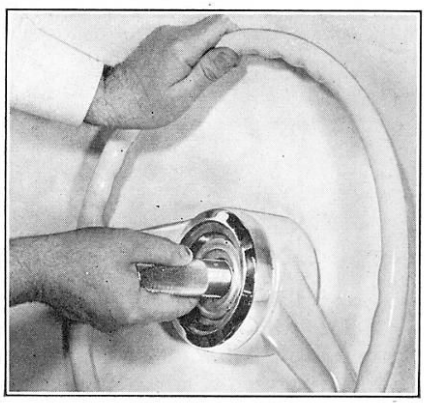
Some passenger car steering wheels and most all truck steering wheels do not have tapped holes in the hub to accommodate a special puller. The puller illustrated at the left, however, will remove these wheels safely and easily. The interlocking jaws fit both four, three and two spoke wheels. Puller is supplied complete with leather protector cup and four steering column adapter buttons.



HORN BUTTON REMOVER AND INSTALLER

KF-101 For 1951 Kaiser cars.

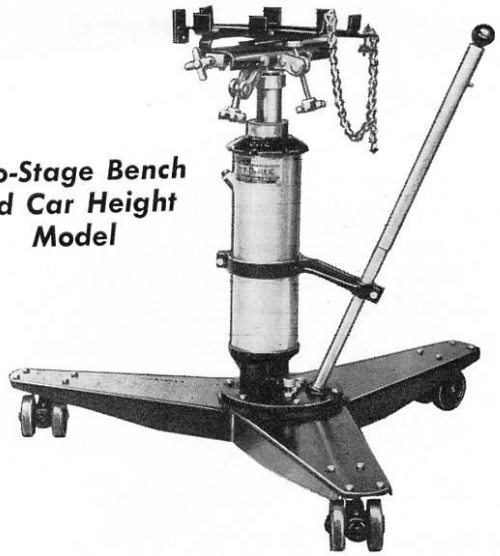
Safeguard your customer's car and save time by using this special rubber-faced tool to securely, yet safely, grip the horn button when removing or installing it. Handle of tool is large for full, powerful grip.



HORN CONTACT RING REMOVER AND INSTALLER

KF-68 For 1951 Kaiser cars.

Care must be exercised when removing the horn contact ring to release the tension on the cross springs while depressing the outer diameter of the ring when it is rotated for removal or installation. This simple tool will be found very helpful in safely and properly manipulating this delicate spring during removal or installation.



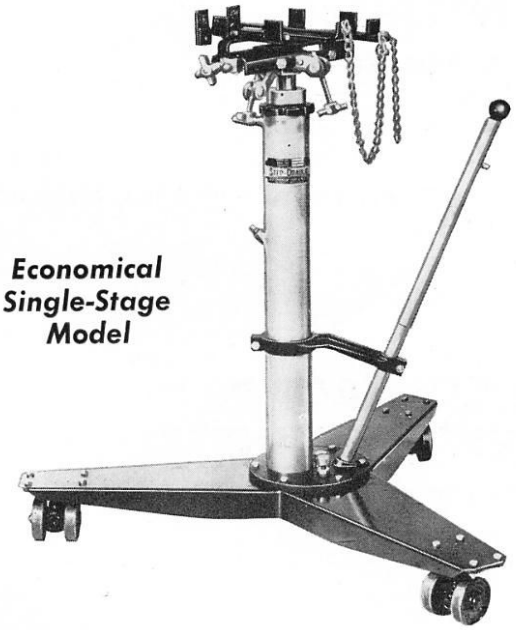
Two-Stage Bench and Car Height Model

MAX. EXTENDED HEIGHT — 72"
MIN. COLLAPSED HEIGHT — 32"
Capacity 1,000 lbs.

BOTH MODELS EQUIPPED WITH AUTOMATIC SAFETY RELEASE VALVE —

If car hoist is lowered accidentally with transmission jack in place, or when added lifting force would injure engine mounts, an overload valve automatically releases hydraulic pressure in jack cylinder and pump.

Both high lift jacks are fitted with foot control release valve mechanism—leaves both hands free to guide transmissions. You give your shop fast, efficient, one-man transmission service—with Safety—when you equip with these labor-saving transmission jacks.



Economical Single-Stage Model

MAXIMUM EXTENDED HEIGHT — 70½"
MINIMUM COLLAPSED HEIGHT — 40½"
Capacity 1,000 lbs.

HYDRAULIC POWERED TRANSMISSION JACKS

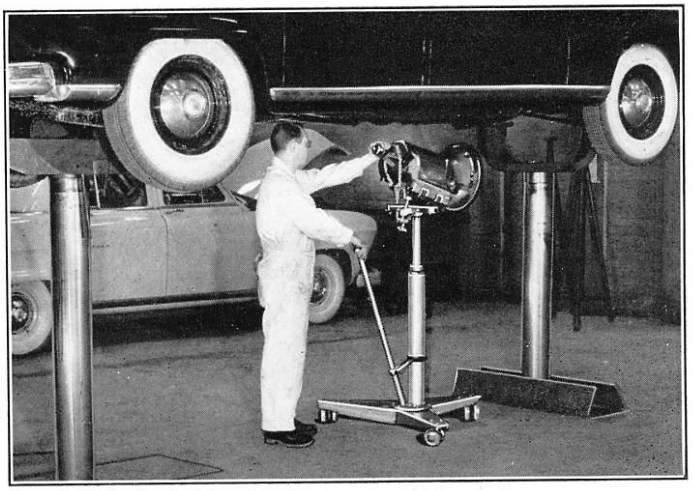
KF-108 Two-Stage, Dual Piston model complete with Hydra-Matic transmission adapter.

Operates At Both Car And Bench Heights

Save back-breaking work and overstrain by equipping your shop with a fast-operating hydraulic transmission service jack like this. Let the jack take the work out of raising the fluid drive or transmission to the proper height for easy removal or installation. The dual piston design provides full height for working under modern hoists yet allows jack to lower to bench height where a heavy transmission can be easily transferred for further service.

SINGLE STAGE JACK

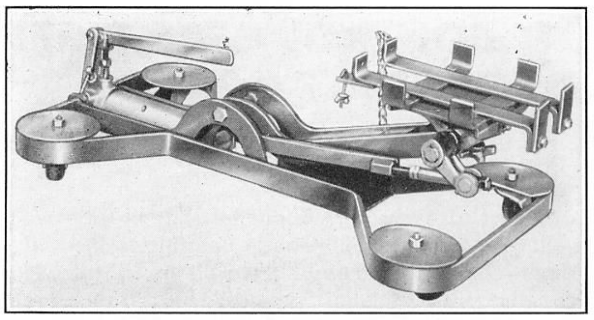
KF-107 Has maximum lift and is supplied complete with Hydra-Matic transmission adapter.



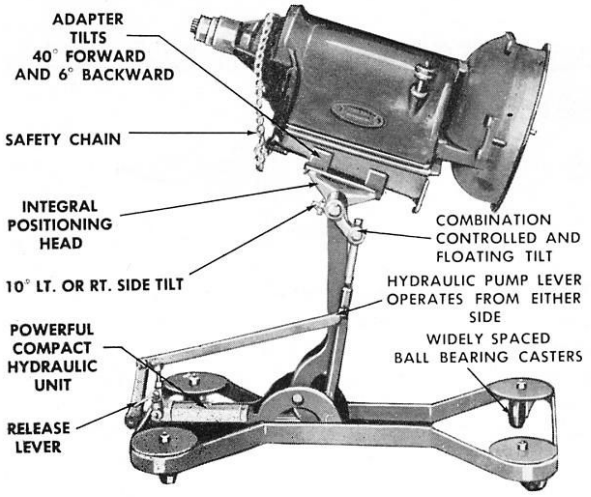
You can save money and still take the work out of transmission removals and installations with this hydraulic jack. Equip with either of these jacks and do all work under the car. Don't take a chance on soiling interior of your customer's car.

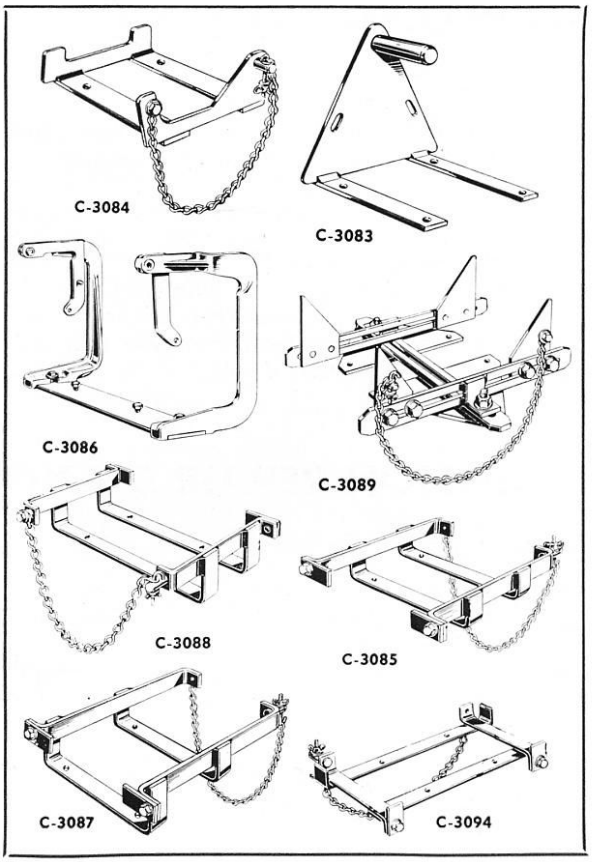
TRANSMISSION LO-JACK

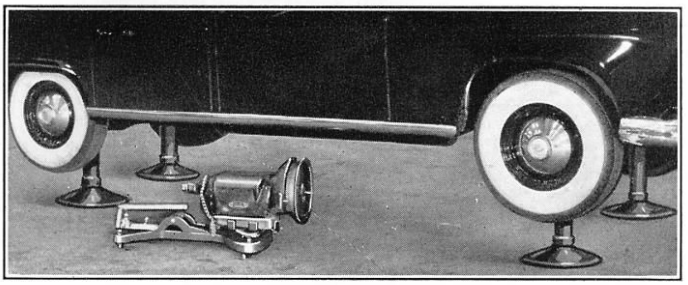
KF-106 Same capacity as high-lift jacks but designed for shops without car hoists. Supplied complete with Hydra-Matic transmission adapter.



MAXIMUM EXTENDED HEIGHT — 23"
MINIMUM COLLAPSED HEIGHT — 5¾"
Capacity — 1,000 lbs.


ADAPTER TILTS 40° FORWARD AND 6° BACKWARD
SAFETY CHAIN
INTEGRAL POSITIONING HEAD
10° LT. OR RT. SIDE TILT
POWERFUL COMPACT HYDRAULIC UNIT
RELEASE LEVER
COMBINATION CONTROLLED AND FLOATING TILT
HYDRAULIC PUMP LEVER OPERATES FROM EITHER SIDE
WIDELY SPACED BALL BEARING CASTERS





Used With Car On Wheel Stands

Shops with a limited number of car hoists prefer this Lo-Jack that works "low-down" close to the floor. Also ideal for second story service areas not equipped with car hoists. Large free-rolling casters make it easy to properly position transmission.

Not A Made-Over Floor Jack

The Lo-Jack was ***designed*** for removing and installing heavy automatic type transmissions ***Safely*** and efficiently. See how easy it is to exactly position the transmission through the backward, forward and side tilting features of the transmission holding adapter. Check the many, time and labor saving features described in left hand illustration. There is no need for back-breaking straining and tugging to get a transmission to slip in place when you're equipped with either of these three special transmission jacks. Equip now for greater safety and speed.

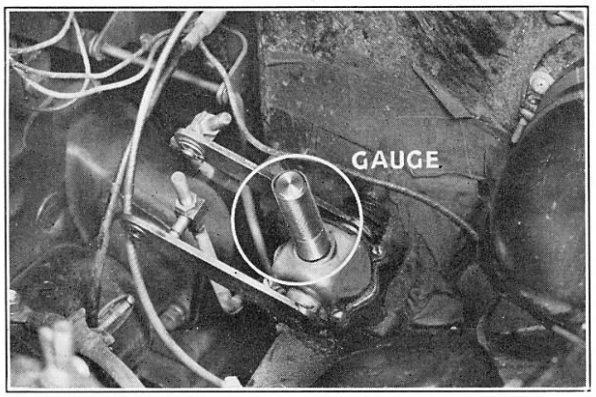
TRANSMISSION HOLDING ADAPTERS FOR ALL TYPES OF TRANSMISSIONS

May Be Used With Either Of 3 Model Jacks

No matter what kind of transmission you want to service, you can especially fit your preferred model jack to service it quicker, safer and easier by selecting the proper adapter from those listed below:

C-3083 Chrysler Fluid Drive and Torque Converter Adapter
C-3084 Dodge, DeSoto and Chrysler Hydraulic Operated Transmission Adapter
C-3085 Hydramatic Transmission Adapter
C-3086 Powerglide Transmission Adapter
C-3087 Ultramatic Transmission Adapter
C-3088 Fordomatic and Merc-O-Matic Transmission Adapter
C-3089 Fit-All Adapter (especially adaptable to Truck Transmissions — Capacity 500 lbs.)
C-3094 Dynaflow Adapter

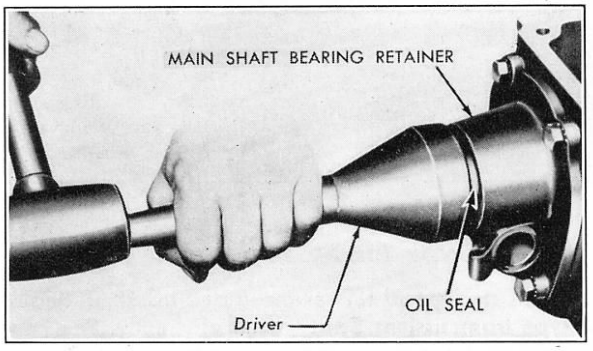
These special adapters will safely hold the transmissions without danger of slipping or causing damage to operating controls, oil pans, etc. They have been designed to meet factory service engineers safety and efficiency standards.



REMOTE CONTROL GEAR SHIFT LEVER LOCATING GAUGE

KF-69 For 1951 Kaiser and Frazer cars. Also 1951 Henry "J" models.

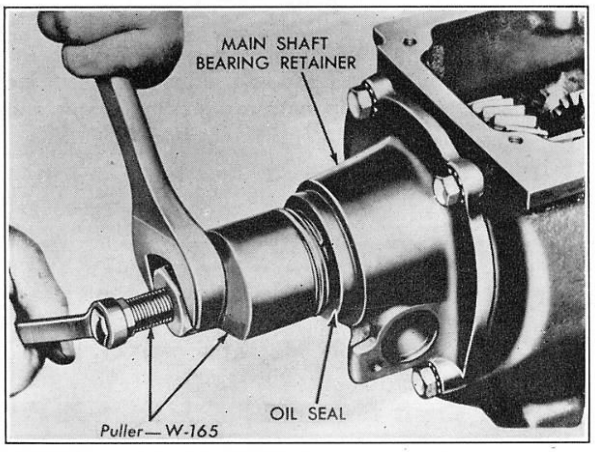
It is easy and fast to accurately align the shift linkage with this simple plug-in type gauge. Gauge centralizes the shifting tongue between the notches of the shift levers allowing fast, positive linkage adjustment. Some cars have a diagonal, tubular brace that interferes with the use of this gauge. Handle of gauge can be cut off to accommodate these cars without reducing the efficiency of gauge on all other 1951 cars on which it must also be used.



TRANSMISSION REAR OIL SEAL INSTALLING DRIVER

C-3105 For all 1947, '48, '49, '50, and 1951 Kaiser and Frazer cars. Also all 1951 Henry "J" models.

Use of the proper driver to install a new seal can be the difference between a leak-proof repair job and a "come back". You'll find this driver will help install a new seal square and to just the proper designed depth, which will avoid internal interference and possible premature wear. This driver supersedes the C-579 Tool and services both old and new models with standard or Hydra-Matic Transmissions. Driver C-579 is not deep enough to service 1951 models.

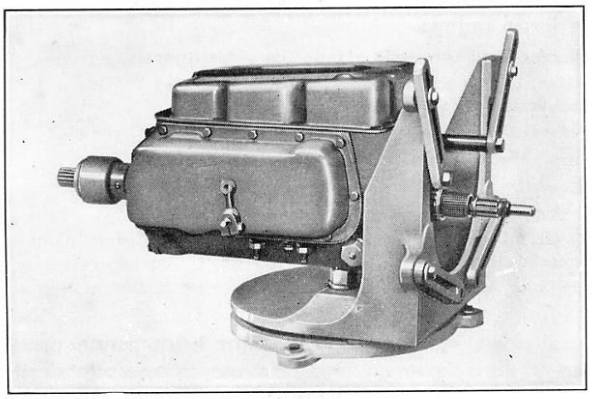


TRANSMISSION REAR OIL SEAL PULLER

W-165 For all 1947, '48, '49, '50, and 1951 Kaiser and Frazer cars. Also all 1951 Henry "J" models.

Also Pulls Rear Axle Pinion Shaft Oil Seals

The sharp, tapered, buttress threads of this puller "bite" into the inner diameter of a wide variety of different size seals. The tighter it is screwed into the seal, the tighter it bites. Tightening pressure screw against the transmission shaft will then remove even a rusted or corroded seal.



TRANSMISSION REPAIR STAND

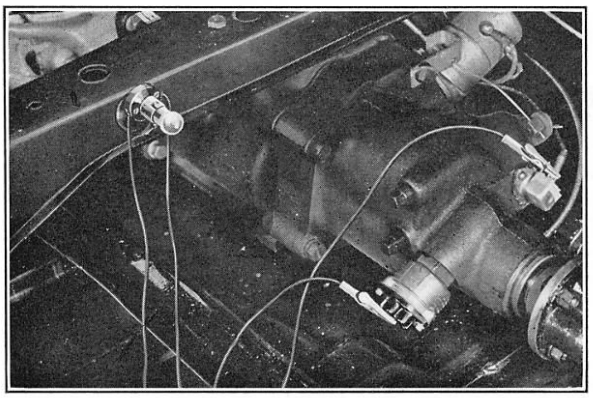
KF-100 Bench type. For all cars.

Stop wasting time and avoid the danger of personal injury from wrestling these heavy units on the floor or bench when repairing them without a stand like this. Your men can save time and do better work when the transmission or differential is firmly held in the most convenient working angle in one of these stands.

Adjustable arms fit wide variety of units — upper part of stand swivels through full 360° circle. Base bolts to bench.

Stand accommodates rear axle differential assemblies and heaviest automatic transmissions.

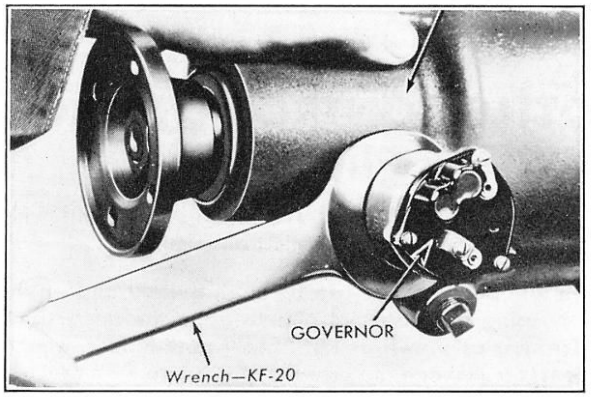
See Floor Type Stand on Page 15.



TEST LIGHT FOR CHECKING OVERDRIVE ELECTRICAL CONTROLS

C-744 For all cars.

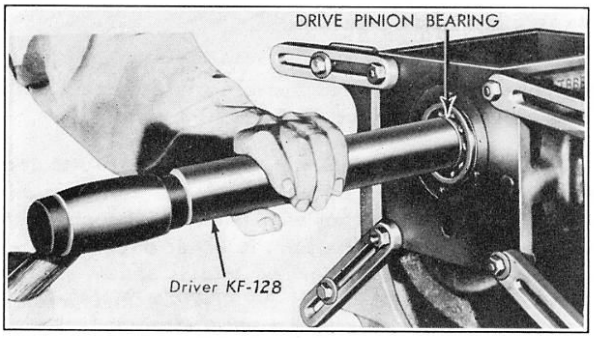
A simple, inexpensive checking light like this makes it easy to check for and locate annoying electrical control troubles. Light leads are fitted with fast connecting alligator clips and a vacuum cup on the light holds it in position.



OVERDRIVE GOVERNOR REMOVING AND INSTALLING WRENCH

KF-20 For all 1947, '48, '49, '50, and 1951 Kaiser and Frazer cars. Also all 1951 Henry "J" models.

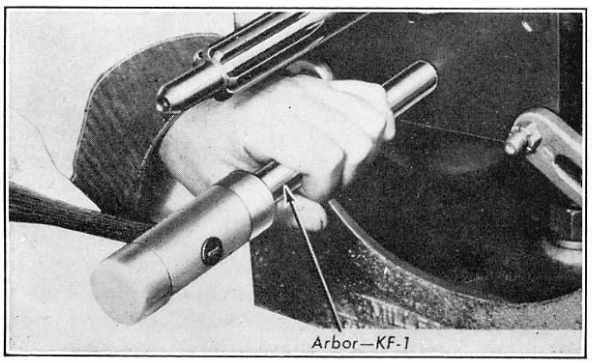
Removal of the governor for inspection is greatly facilitated through the use of this special wrench. Its use avoids damage to this sensitive electrical unit during removal or installation.



TRANSMISSION MAIN DRIVE PINION BALL BEARING INSTALLING DRIVER

KF-128 For all 1947, '48, '49, '50, and 1951 Kaiser and Frazer cars. Also all 1951 Henry "J" models.

This is one of the most versatile drivers available for Kaiser-Frazer service. Its long body provides exceptional depth to clear long shafts, such as illustrated. It is used on cars equipped with standard or Hydra-Matic transmissions. Be sure your shop has several, their use will save parts and considerable extra labor usually lost looking for makeshift drivers. Supersedes Driver KF-11, which is not long enough to service late models.

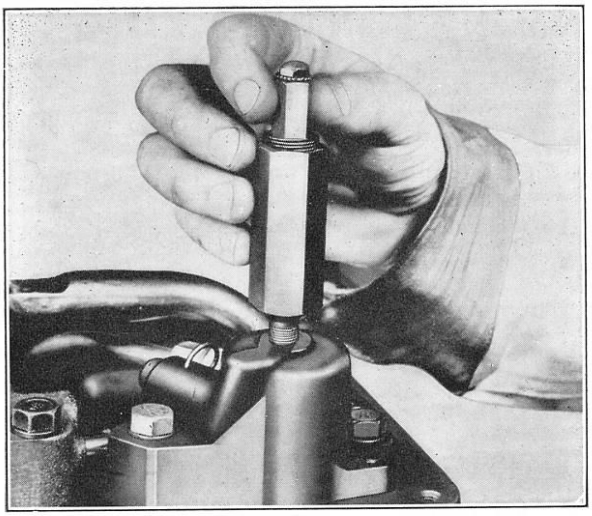


TRANSMISSION COUNTER-SHAFT NEEDLE BEARINGS ASSEMBLY ARBOR

KF-1 For all 1947, '48, '49, '50 and 1951 Kaiser and Frazer cars.

W-193 For all 1951 Henry "J" models.

Arbor is carefully ground to a precision slip fit so that it may be used to push the transmission countershaft from place and still keep all the numerous "needle" or small roller bearings in place. Because the arbor is just the exact length the complete countershaft gear assembly including thrust washers can be lifted (or replaced) intact from the transmission. A slight taper is machined on the end of the arbor to make it easy to align itself as it enters the thrust washers.

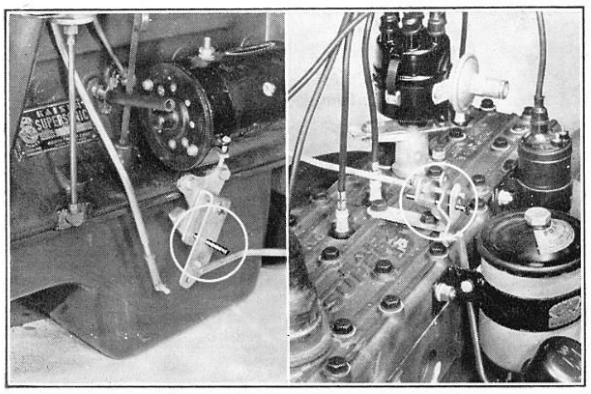


FRONT SERVO GAUGE

KF-92 For 1951 Kaiser and Frazer cars equipped with K-50 or K-51 Hydra-Matic transmissions.

Gauge should be screwed hand tight in front servo pipe plug opening. Plunger of gauge is adjusted until it touches servo piston and then turned six more full turns. Front band adjusting screw can now be tightened until knurled washer of gauge is just free to turn. Back off gauge plunger before removing tool.

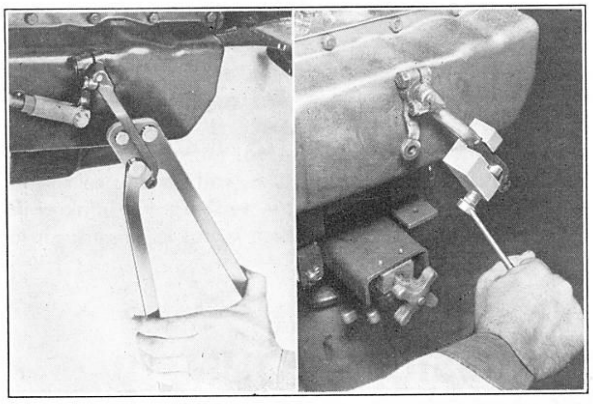
The Word "HYDRA-MATIC" Wherever Used Herein is a REGISTERED TRADE MARK OF GENERAL MOTORS CORPORATION



THROTTLE CONTROL LINKAGE ADJUSTING PINS (Pair)

KF-91 For 1951 Kaiser and Frazer cars equipped with K-50 or K-51 Hydra-Matic transmissions.

Best engine idle performance can be more quickly and easily obtained by using these special pins to align the upper and lower bellcranks, as shown at left. See Kaiser-Frazer service specifications for linkage adjustment procedure.



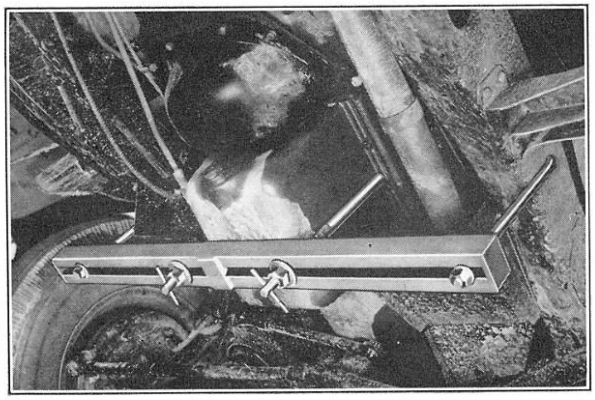
KF-79 KF-79-A

THROTTLE LEVER BENDING TOOL

KF-79 For 1951 Kaiser and Frazer cars equipped with K-50 or K-51 Hydra-Matic transmissions.

If the throttle lever linkage does not properly line up to the KF-78 Gauge (shown on following page), the forged steel throttle lever can be easily bent with this special tool. Tool is reversible so that lever can be bent in either direction.

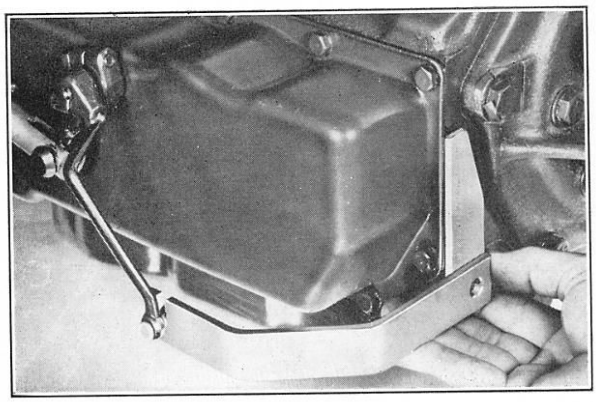
A second model of this important tool is shown in the illustration at left. It is identified as KF-79-A and uses a pressure screw in place of the long leverage handles. Either model will be found equally efficient.



ENGINE REAR SUPPORT FIXTURE

KF-104 For 1951 Kaiser and Frazer cars equipped with K-50 or K-51 Hydra-Matic transmissions. (Supersedes KF-47 Fixture.)

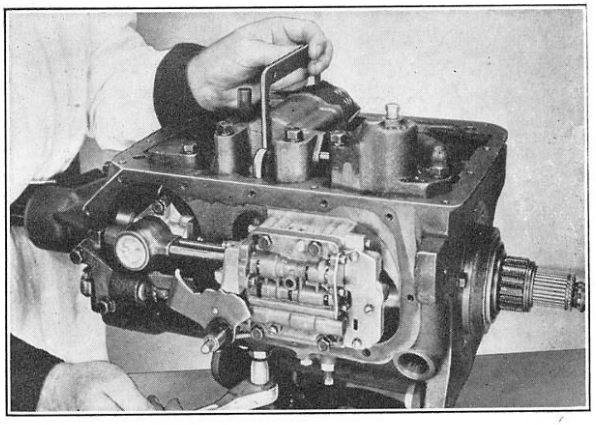
When the transmission is removed from the car, this support fixture holds the engine in place. Fixture is rigid enough to allow car to be moved to more convenient storage bay if necessary. Adaptable to all Kaiser, Frazer cars and most other makes using Hydra-Matic transmissions.



THROTTLE LEVER CHECKING GAUGE

KF-78 For 1951 Kaiser and Frazer cars equipped with K-50 or K-51 Hydra-Matic transmissions.

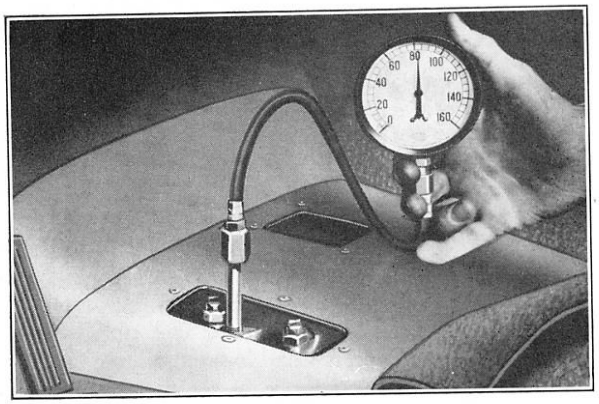
Gauge should be held against the machined surface at the rear of the transmission case as illustrated. When the throttle lever is in the extreme rear position, clevis pin should fit in slot of gauge as shown. Use KF-79 Bending Tool to align throttle lever.



REAR SERVO GAUGE

KF-77 For 1951 Kaiser and Frazer cars equipped with K-50 or K-51 Hydra-Matic transmissions.

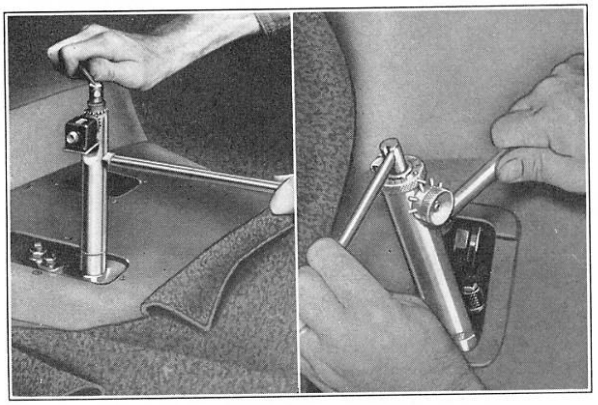
This is an important snap-type gauge that is used as illustrated in both inspection and repair operations. Short end of gauge hooks over back of rear servo body and long end rests on top of servo piston rod, to indicate proper adjustment of rear band.



OIL PRESSURE CHECKING GAUGE

KF-94 For 1951 Kaiser and Frazer cars equipped with K-50 or K-51 Hydra-Matic transmissions.

Main line oil pressure can be accurately checked with this large, easily read gauge with car stationary or during road test. Transmission oil should be warm when testing and comparing pressures. Remove floor hole cover over band adjusting screws and gauge can then be installed in pipe plug opening located on top of transmission between band adjusting screws.



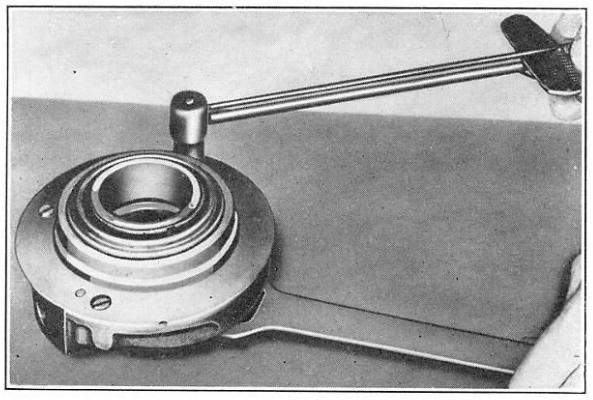
KF-96 KF-96-A

SERVO BAND ADJUSTING TOOL

KF-96 For 1951 Kaiser and Frazer cars equipped with K-50 or K-51 Hydra-Matic transmissions.

Use this special "counter" type tool to make accurate servo band adjustments without removing transmission oil pan. Outer section of tool holds lock nut while internal socket engages servo band adjusting screw. Gear driven counter indicates number of turns applied to adjusting screw.

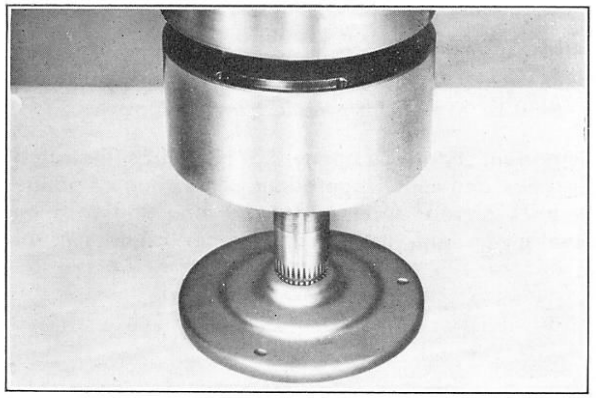
A second model of this wrench works in a similar manner but does not use an automatic, mechanical counter. This second model of this wrench is shown in the illustration and identified as KF-96-A. Each model is equally efficient. Detail operating instructions are supplied with each tool.



FRONT PUMP HOLDER AND SOCKET WRENCH SET

KF-84 For 1951 Kaiser and Frazer cars equipped with K-50 or K-51 Hydra-Matic transmissions.

This holding tool safely grips the pump housing while removing or replacing the pump cover attaching screws. A ½" to ⅜" reducer and a special screw driver socket is also supplied with the holding wrench to adapt the KF-99 Tension Wrench to the pump screws.



FRONT PLANET CARRIER ASSEMBLY HOLDER

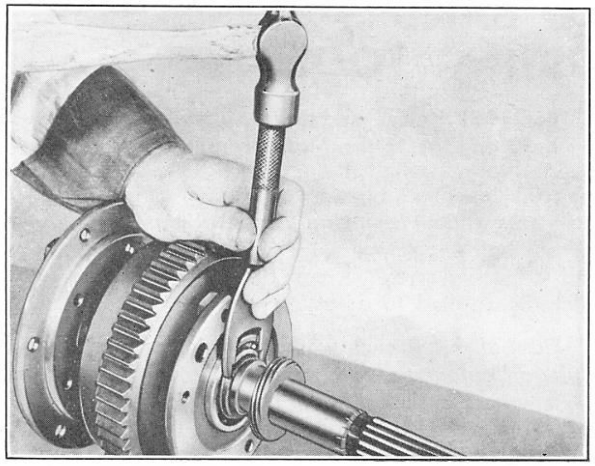
KF-74 For 1951 Kaiser and Frazer cars equipped with K-50 or K-51 Hydra-Matic transmissions.

Considerable time and extra effort are saved through the use of this fixture which holds the front planet carrier in a vertical position while it is being serviced.

OIL DELIVERY SLEEVE RING COMPRESSOR

KF-73 For 1951 Kaiser and Frazer cars equipped with K-50 or K-51 Hydra-Matic Transmissions.

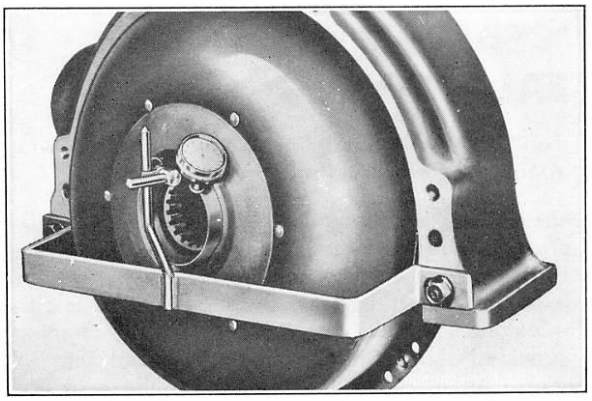
Use of this inexpensive compressor will prevent damage to the fragile oil rings as they are compressed for installation of the oil delivery sleeve in the front and rear unit clutch drum recesses. Latch on end of compressor handle allows tool to be locked in compressed position.



OUTPUT SHAFT BALL BEARING RETAINER RING REMOVER

KF-72 For 1951 Kaiser and Frazer cars equipped with K-50 or K-51 Hydra-Matic transmissions.

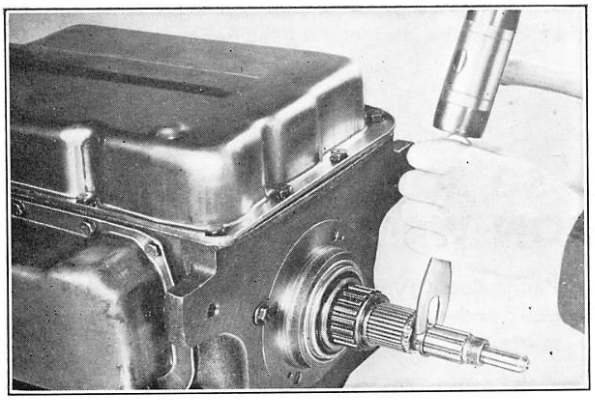
Both ends of the stiff output shaft ball bearing retainer ring are engaged simultaneously with the driving edges of this special tool. Use of a makeshift tool often causes damage to the shaft.



TORUS COVER HUB CHECKING FIXTURE

KF-70 For 1951 Kaiser and Frazer cars equipped with K-50 or K-51 Hydra-Matic transmissions.

Runout at the oil sealing hub of the torus cover can be the cause of a serious oil leak. Use of this simple fixture, which bolts to the rear of the engine as shown, allows the KF-98 Dial Indicator to be accurately adjusted to indicate the torus cover hub. Fixture can be used with engine in or out of car.



MAINSHAFT SNAP RING REMOVER

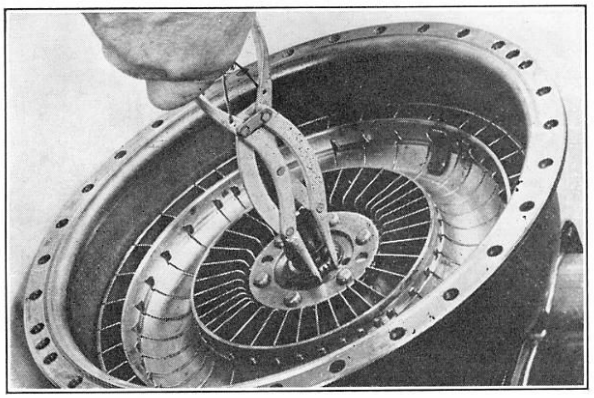
KF-71 For 1951 Kaiser and Frazer cars equipped with K-50 or K-51 Hydra-Matic transmissions.

The open type snap ring used on the Hydra-Matic transmission mainshaft is very stiff and requires this special tool to safely remove it. Attempting to remove this ring with hammer and punch may damage shaft.

FRONT PUMP COVER OIL SEAL DRIVER

KF-93 For 1951 Kaiser and Frazer cars equipped with K-50 or K-51 Hydra-Matic transmissions.

An extra deep counterbore in this driver saves unnecessary dismantling of the transmission. It is only necessary to remove the torus members, torus cover and rear bell housing to install a new seal with this driver.

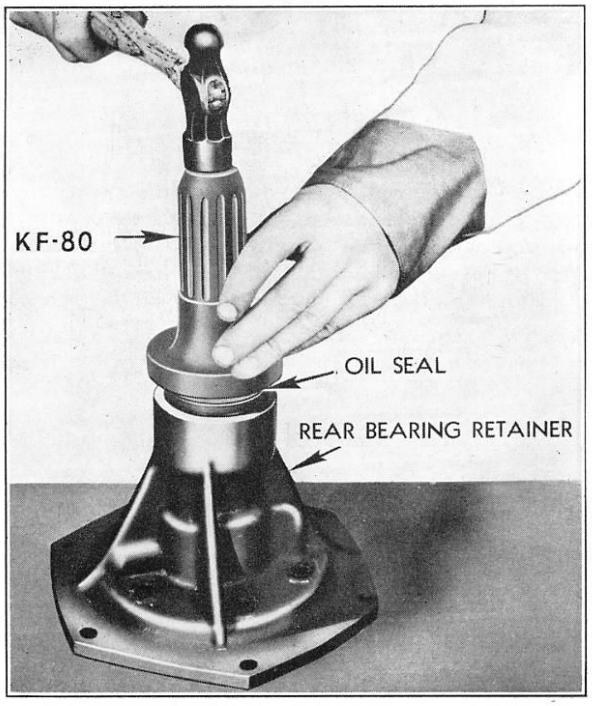


SNAP RING REMOVING AND INSTALLING PLIERS

KF-97 For 1951 Kaiser and Frazer cars equipped with K-50 or K-51 Hydra-Matic transmissions.

Unique Design Maintains Parallel Alignment of Jaws

A strong, dependable pair of snap ring pliers are a "must" in the maintenance and repair of most all types of transmissions. These pliers have a unique design that provides parallel alignment of the spring loaded jaws as they are expanded.



REAR BEARING RETAINER OIL SEAL DRIVER

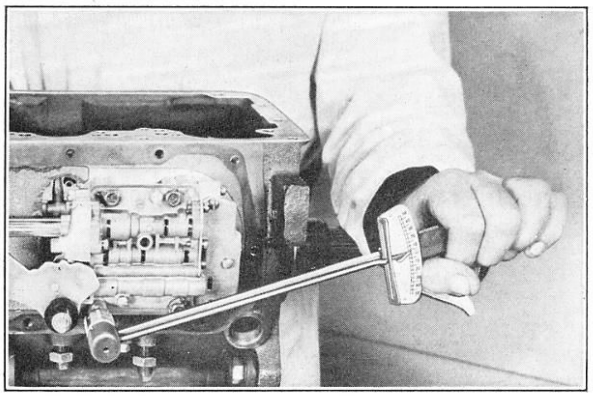
KF-80 For 1951 Kaiser and Frazer cars equipped with K-50 or K-51 Hydra-Matic transmissions.

Special drivers such as these provide invaluable help in assuring a leak-proof repair job. Each driver is designed to fit the seal which it must install — it must contact the seal where the driving force will not distort the seal. Proper clearance is also provided for extending shafts, and in many cases, aligning pilots are provided that will help guide the seal into its proper location. An extra driving blow after the seal has been driven "home" in its counterbore will expand the seal tightly against the counterbore, and often prevents an oil leak around the outside diameter of the seal.

0 TO 50 FOOT POUND TENSION WRENCH

KF-99 Round Beam Type, for 1951 Kaiser and Frazer cars equipped with K-50 or K-51 Hydra-Matic transmissions.

See Page 51 For Complete Listing of Other Sizes of Tension Wrenches Also Available

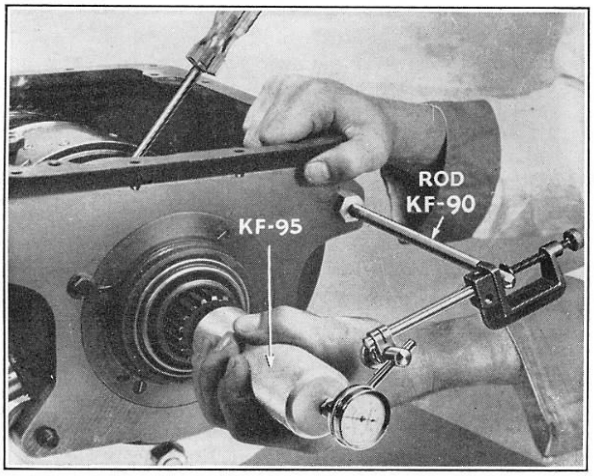


Be sure to use this special tension wrench to accurately torque all Hydra-Matic transmission attaching studs, nuts, bolts and screws in accordance with Kaiser-Frazer service recommendations. Proper use of this wrench will help prevent oil leaks and help assure proper functioning of the transmission.

MAINSHAFT END-PLAY GUIDE

KF-95 For 1951 Kaiser and Frazer cars equipped with K-50 or K-51 Hydra-Matic transmissions.

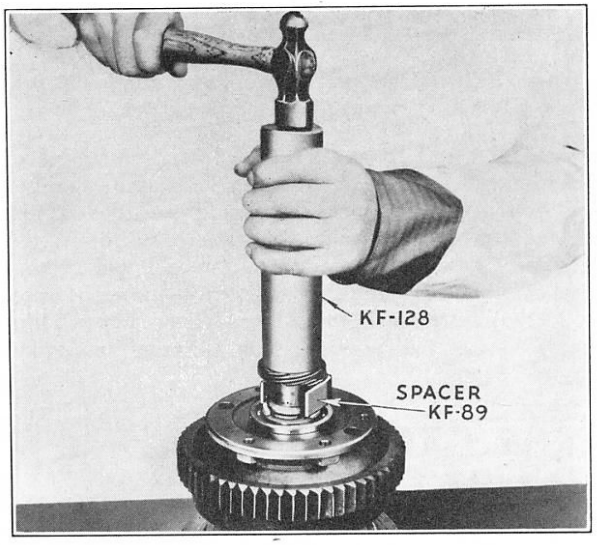
An internal thread in this guide allows it to be screwed on the front end of the mainshaft. It will then hold the front planet carrier assembly spline shaft and the mainshaft in proper relation so that end play can be checked with the KF-98 Dial Indicator Set and KF-90 Rod as shown.



DIAL INDICATOR EXTENSION ROD

KF-90 For 1951 Kaiser and Frazer cars equipped with K-50 or K-51 Hydra-Matic transmissions.

Through the use of this long rod the KF-98 Dial Indicator can be supported as shown while checking end-play of the mainshaft.



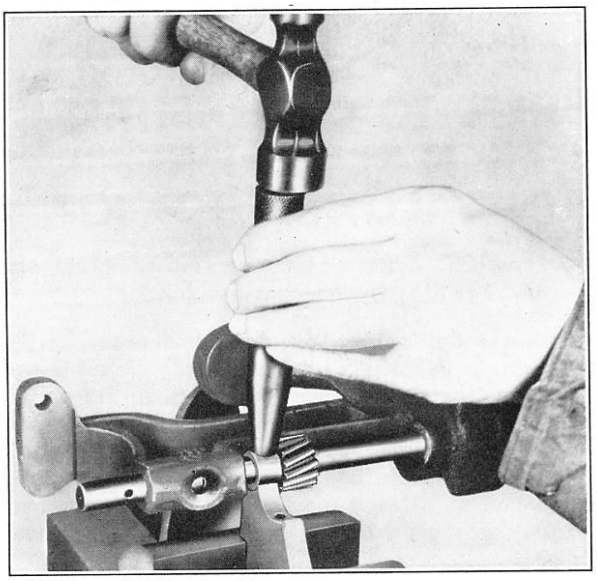
SPEEDOMETER GEAR DRIVER

KF-128 For 1951 Kaiser and Frazer cars equipped with K-50 or K-51 Hydra-Matic transmissions.

This Driver Can Also Be Used For Many Other Services

(Supersedes KF-11 used on earlier models.)

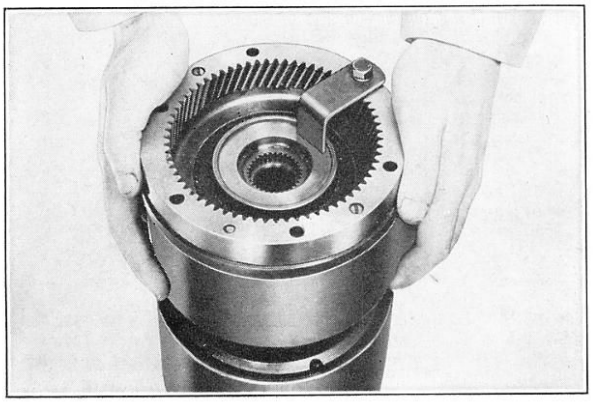
The long tubular construction of this special driver makes it extremely valuable for unusual service jobs, such as installing the speedometer gear illustrated at left. This same driver is shown in another section of this book, safely installing a rear axle pinion shaft bearing and similar service operations. Be sure your shop has several — they'll save their modest cost many times over.



SPEEDOMETER DRIVE GEAR LOCATING SPACER

KF-89 For 1951 Kaiser and Frazer cars equipped with K-50 or K-51 Hydra-Matic transmissions.

Proper location of the speedometer gear on the output shaft is assured through the use of this special spacer. Use KF-128 Driver to install speedometer gear until it touches spacer as illustrated.



GOVERNOR FLANGE AND PUMP RIVETING SET

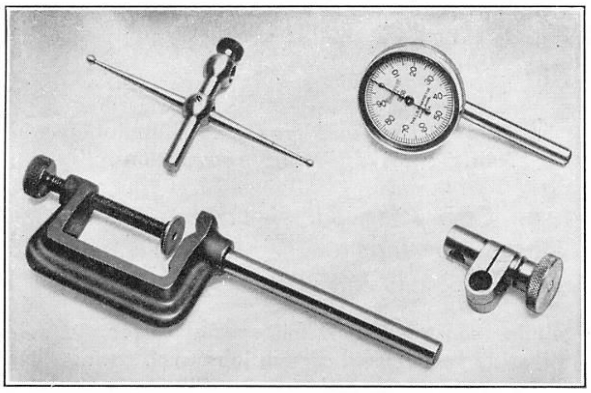
KF-81 For 1951 Kaiser and Frazer cars equipped with K-50 or K-51 Hydra-Matic transmissions.

This riveting set contains a special rivet set or punch and a two-sided anvil. A shallow counterbore in each radii of the anvil properly spaces pins for depth during riveting. Be sure pins completely fill hole in gear and flange.

REAR CLUTCH HUB RETAINER BRACKET

KF-88 For 1951 Kaiser and Frazer cars equipped with K-50 or K-51 Hydra-Matic transmissions.

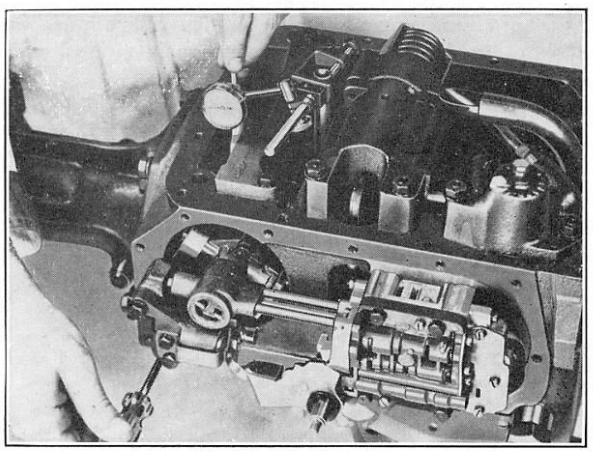
Avoid needless extra work by using this simple clamping bracket to hold the rear clutch hub in place while removing or installing the rear unit. Bracket is securely held in place with a reverse drive flange attaching bolt.



DIAL INDICATOR SET

KF-98 For 1951 Kaiser and Frazer cars equipped with K-50 or K-51 Hydra-Matic transmissions.

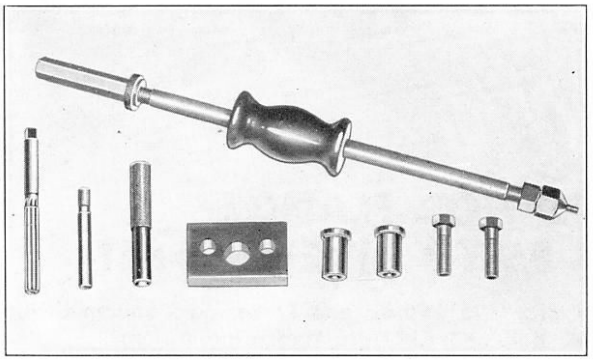
Accurate inspection and correct diagnosis of misalignment of the clutch housing, flywheel, torus unit, etc., is simple when this easy-to-use gauge set is used. The clamp provides a fast convenient means of securely holding the indicator in the desired position. A swivel connector is also included so that the dial indicator can be adjusted to exactly the right spot. You'll find many illustrations in the Kaiser-Frazer shop manual showing how to use this gauge set in different inspection operations.



REVERSE GEAR BACKLASH GAUGE

KF-76 For 1951 Kaiser and Frazer cars equipped with K-50 Hydra-Matic transmissions.

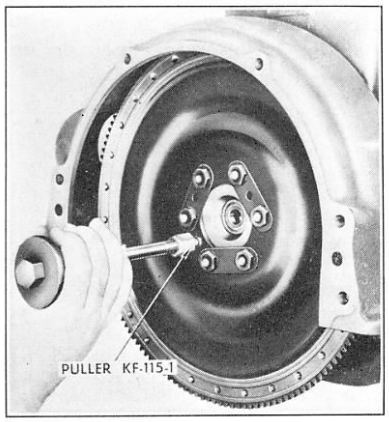
Backlash between the teeth on the reverse anchor and the teeth of the reverse internal gear can be measured by using this gauge in conjunction with the KF-98 Dial Indicator Set, as illustrated. Consult Kaiser-Frazer Hydra-Matic service specifications for details.



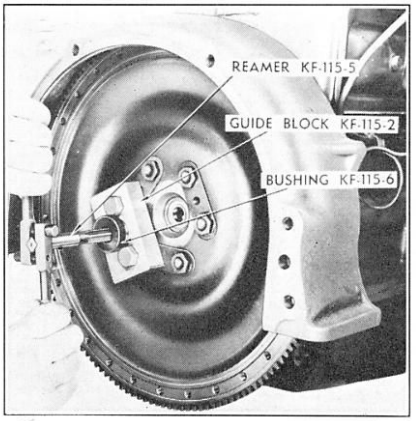
FLYWHEEL TO CRANKSHAFT DOWEL PIN REMOVING AND INSTALLING TOOL KIT

KF-115 For 1951 Kaiser and Frazer cars equipped with K-50 or K-51 Hydra-Matic transmissions.

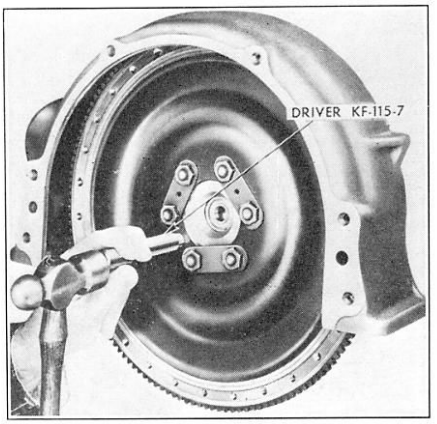
Through the use of this tool set, a crankshaft, flywheel or flywheel dowel can be efficiently replaced in any Kaiser-Frazer service shop. Set contains a puller to remove an old dowel, drill and reamer bushings, reamer, bushing jig and dowel driver. Complete illustrated operating instructions are provided in the Kaiser-Frazer shop manual. Dowels cannot be reused after removal. Always use this tool set and install an oversize dowel as specified in official Kaiser-Frazer service procedure.



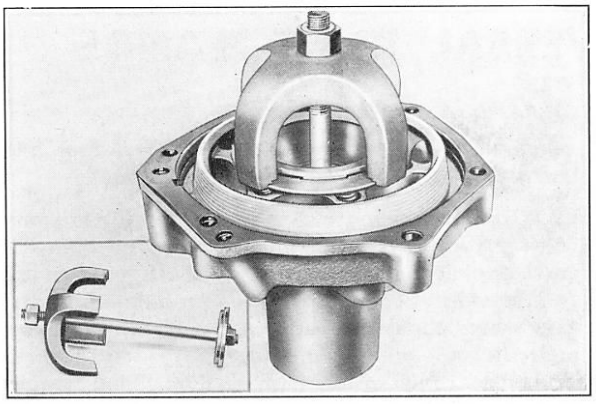
Drill and tap old dowel with standard No. 1 (.272") drill and 5/16"-24 tap (not supplied in KF-115 Set). Dowel can then be easily removed with KF-115-1 Adapter and knock-out type tool from set.



After the crankshaft has been drilled with a sharp, standard ½" drill, the KF-115-5 special reamer should be used as illustrated above. Be sure to follow complete Kaiser-Frazer factory specifications.



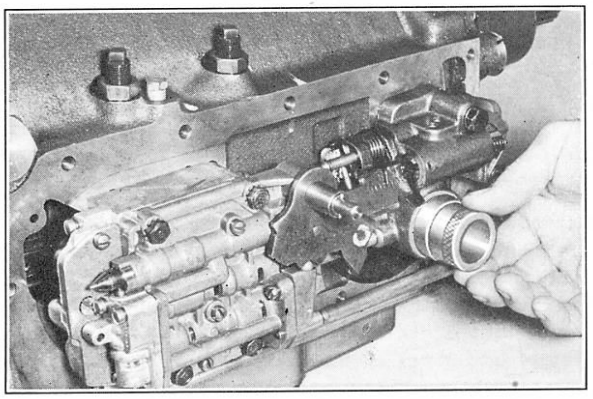
After carefully drilling and reaming the crankshaft, the new oversize dowel should be driven securely in position with KF-115-7 Special Driver supplied in this set.



REVERSE CLUTCH PISTON RELEASE SPRING COMPRESSOR

KF-133 For 1951 Kaiser and Frazer cars equipped with K-51 Hydra-Matic transmissions.

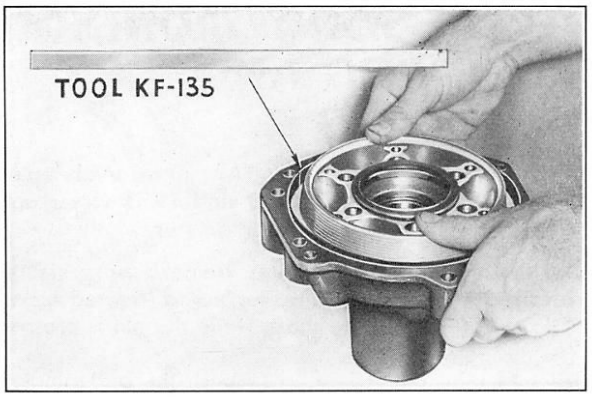
The illustration at left shows how easily this special tool compresses the six springs of this unit and releases the pressure from against the retaining snap ring. The snap ring can then be removed with the KF-97 Snap Ring Pliers. Insert in illustration at left shows complete KF-133 tool.



GOVERNOR TO PARKING BRAKE BRACKET ALIGNER

KF-134 For 1951 Kaiser and Frazer cars equipped with K-51 Hydra-Matic transmissions.

This special sleeve is accurately ground to centralize the parking brake bracket on the governor assembly while the bracket is being bolted in place. Attempting to install the parking brake bracket without this centralizing sleeve will invariably result in having to try several times to properly locate the bracket.



REVERSE PISTON OUTER SEAL INSTALLER

KF-135 For all 1951 Kaiser and Frazer cars equipped with K-51 Hydra-Matic transmissions.

Although this tool is actually only a strip of spring steel, it is just the proper thickness and exactly the right length to compress the reverse piston seal and allow, safe, fast installation of the piston. Use this simple, low-cost tool and save time.

KAISER-FRAZER HYDRA-MATIC TRANSMISSION
SPECIAL SERVICE TOOL SETS (For K-50 and K-51 Transmissions.)

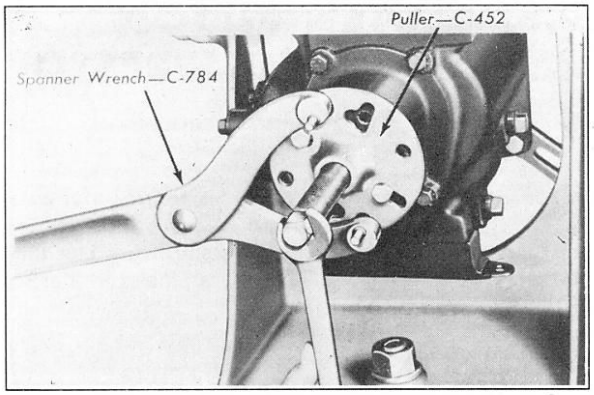
These special tools have been very carefully developed in cooperation with Kaiser-Frazer service engineers working with engineers from the manufacturer of Hydra-Matic transmissions. The tools listed below are vital and absolutely essential to correctly perform required Hydra-Matic service operations in a satisfactory and dependable manner. Hydra-Matic service operations requiring the use of any one of these tools should not be attempted by untrained mechanics or without the use of these special service tools.

KF-109 Set of 30 Special Service Tools for complete inspection and repair of all K-50 and K-51 Hydra-Matic transmissions used in Kaiser and Frazer cars.

KF-70	FIXTURE	* KF-77	GAUGE	KF-88	BRACKET	* KF-94	GAUGE	KF-100	STAND
KF-71	REMOVER	* KF-78	GAUGE	KF-89	SPACER	KF-95	GUIDE	KF-104	FIXTURE
KF-72	REMOVER	* KF-79	TOOL	KF-90	ROD	* KF-96	TOOL	KF-128	DRIVER
KF-73	COMPRESSOR	KF-80	INSTALLER	* KF-91	PINS	KF-97	PLIERS	KF-133	COMPRESSOR
KF-74	HOLDER	KF-80	RIVETING SET	* KF-92	GAUGE	KF-98	SET	KF-134	ALIGNER
KF-76	GAUGE	KF-84	SOCKET SET	KF-93	DRIVER	KF-99	WRENCH	KF-135	INSTALLER

KF-110 Set of 7 special service tools for new car inspection and delivery service. (See items marked with * above)
These seven tools have been selected by Kaiser-Frazer Service Engineers as those essential to perform those services that may be required for new car inspection and pre-delivery service. They can all be used without removing the Hydra-Matic transmission from car. KF-111 set of 23 additional tools should be added before more extensive Hydra-Matic services are attempted.

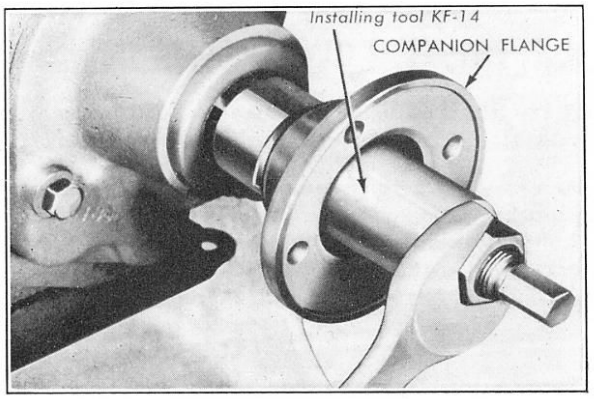
KF-111 Set of 23 Special Service Tools required to complete a KF-110 Set to equal KF-109 Set.
This special tool set is made up for the convenience of those customers who have already obtained the KF-110 Seven Tool Set for inspection and new car delivery service. Be sure all seven tools of KF-110 Set are available and in good working condition BEFORE ordering this set. All individual tools available separately so that lost and damaged tools can be easily replaced.



UNIVERSAL JOINT FLANGE PULLER

C-452 For all 1947, '48, '49, '50, and 1951 Kaiser and Frazer cars. Also all 1951 Henry "J" models.

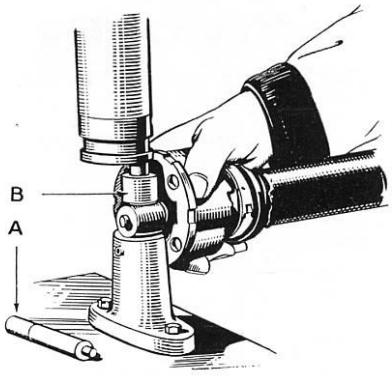
Careful design and machining makes it possible for this one tool to fit all the various types of flanges found on both the transmission and pinion end of the drive shafts used in all these different models of cars. Both your rear axle and transmission departments should be equipped with this low-cost efficient tool. Its use will avoid unnecessary loss of time should your men be required to pry these tight fitting flanges from position.



UNIVERSAL JOINT FLANGE INSTALLING TOOL

KF-14 For all 1947, '48, '49, '50, and 1951 Kaiser and Frazer cars. Also all 1951 Henry "J" models.

This tool threads onto the end of either the pinion or transmission shaft and provides a safe positive method of pushing the "U" joint flange securely in place. The use of this tool prevents any damage to gear teeth and bearings while installing these flanges. Driving the flanges in place transfers the full weight and shock of the hammer blows to the transmission or rear axle gears and bearings.

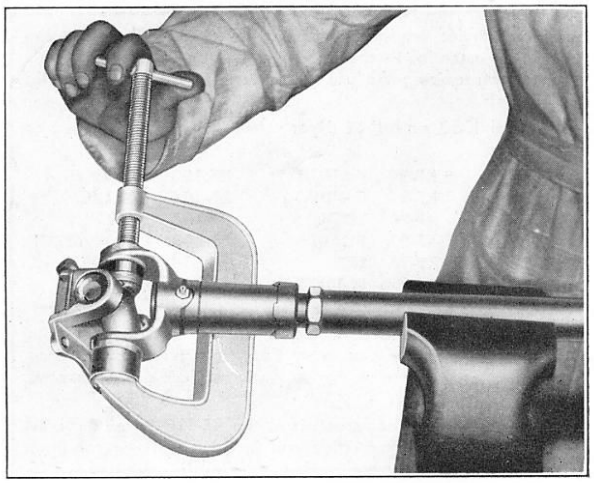


UNIVERSAL JOINT TRUNNION PIN REMOVING AND INSTALLING JIG

C-552 Jig complete with pilot pin (A) and assembly bushing (B). For 1947, '48, '49 and 1950 Kaiser and Frazer cars. Also all 1951 Frazer cars.

Removal of these pins often requires tremendous pressure, but you can always depend on this simple heat-treated nickel alloy steel jig to safely hold the shaft, while the pin is pressed out.

The hardened pilot pin A is used to push the old trunnion pin all the way out of the shaft. The assembly bushing B is slipped over the top end of a new pin and used as a spacer to indicate the proper location of the new pin. When the new pin is flush with the ground face of the bushing it will provide a smooth balanced joint. An improperly centered pin will cause a rough out-of-balance assembly.

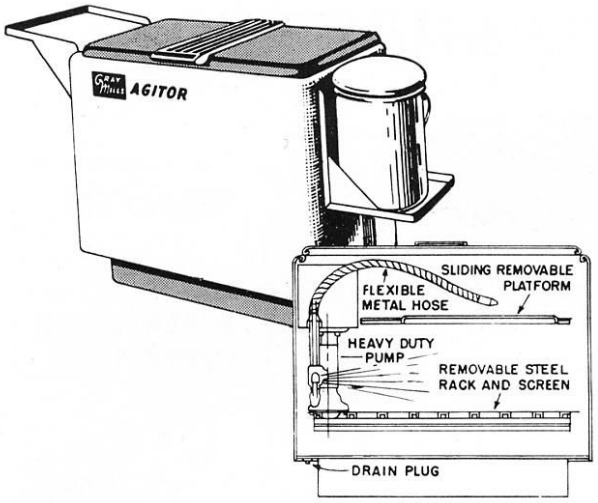


UNIVERSAL JOINT BEARING REMOVING AND INSTALLING CLAMP AND ADAPTER

W-148 For early model 1947 Kaiser and Frazer cars, and all 1951 Kaiser cars. Also all 1951 Henry "J" models.

Considerable pressure is required to allow the bearing assembly of this joint to be taken apart for inspection or replacement. This special tool can be used to compress the assembly and leave both hands free to remove or install the lock ring as illustrated.

COLD PARTS CLEANER



Model H-76* Max. solvent cap. 50 gal. — Min. 38 gal. Overall size 38" x 21" x 34½" high — tank 26" deep. Supplied with bottom rack and screen, shelf, air agitator and 60 Cycle, 110 Volt pump with filter. L-8 Swisher basket extra.

Every shop needs efficient parts cleaning tanks to turn out better quality work, faster. These cleaners use a solvent that requires no heating. They are equipped with quiet-operating, centrifugal pumps discharging approx. 10 gal. per minute. Control valve provides hi-volume hose cleaning, fountain surge, circular agitation and air agitation cleaning. Write for special illustrated catalog page.

2 ADDITIONAL SIZES

Model H-81* Large size. Capacity approx. 95 gal. Size 41½" x 30" x 37½" high. Supplied complete with ⅛ H.P., 110/220 Volt, 60 Cycle rotary Pump, bottom rack and control valves.

Model H-78* Same external appearance and construction as H-76 but with large ⅛ H.P. centrifugal pump with 3 times H-76 pump capacity. Discharge from pump agitates liquid. Supplied complete with selector valve.

*Shipped F.O.B. Evanston, Illinois.

3 TYPES OF CLEANER AVAILABLE

SUPER-AGITENE CONCENTRATE

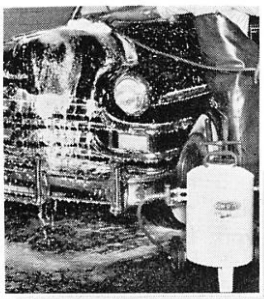
A general purpose cleaner used for all types of parts cleaning —automotive, aviation, and general repair. May also be used for cleaning painted surfaces and shop floors. Sold in 5- and 15-gallon containers or 55-gallon drums.

NEW STEPPED-UP SPEED-AGITENE

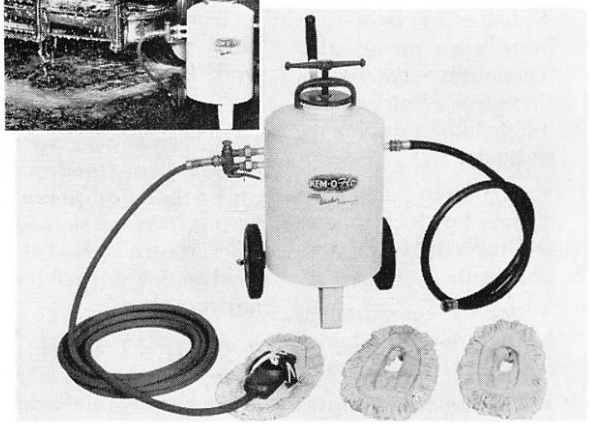
A powerful, penetrating solvent prepared especially for cleaning carburetors, pistons, fuel pumps, and other parts having carbon and gum deposits. It is non-corrosive and will not injure any metals. Sold in 5- and 15-gallon containers and 55-gallon drums.

REGULAR AGITENE

A safe solvent used in automotive and general repair service where a straight solvent is desired that dries film free and requires no water rinse. Sold only in 55-gallon drums.



IDEAL FOR CUSTOM OR PRODUCTION LINE CAR WASHING — ONE MAN OPERATED



AUTOMATIC SUDSING CAR WASHER

MT-361 Passenger car model. Contains 6 gal. pressure tank with wheels and handle, 30 feet hose with sudsing mop attached, 6 feet connecting hose with fittings, 2 extra mop refills and 20 lb. drum of sudsing detergent.

MT-362 Same as MT-361 less wheels and handle.

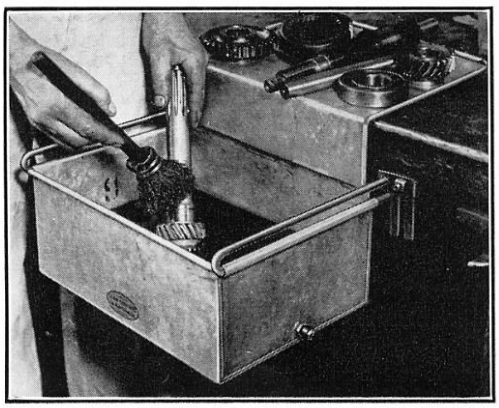
MT-363 Truck and trailer model. Similar to MT-361 but fitted with 3" x 9" brush with 3 foot aluminum extension and 25 lb. drum of truck detergent.

Sudsing To Clear Water Rinse At Flip Of Valve

Washer connects direct to cold water tap—uses no electricity or air power yet makes it possible for one man to turn out a quality sudsing car wash in only ten minutes. Sudsing detergent is automatically metered into water flow—one pound will wash from 60 to 70 cars and use only 1/3 usual volume of water.

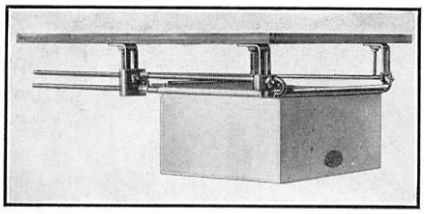
Washes Trucks, Trailers, Tile Walls, Shop Windows, Etc.

Special heavy-duty detergent available for trucks—cuts usual washing time—turns out better job. Boosts moral of car washing personnel—helps avoid cut and skinned knuckles—saves water and detergent.



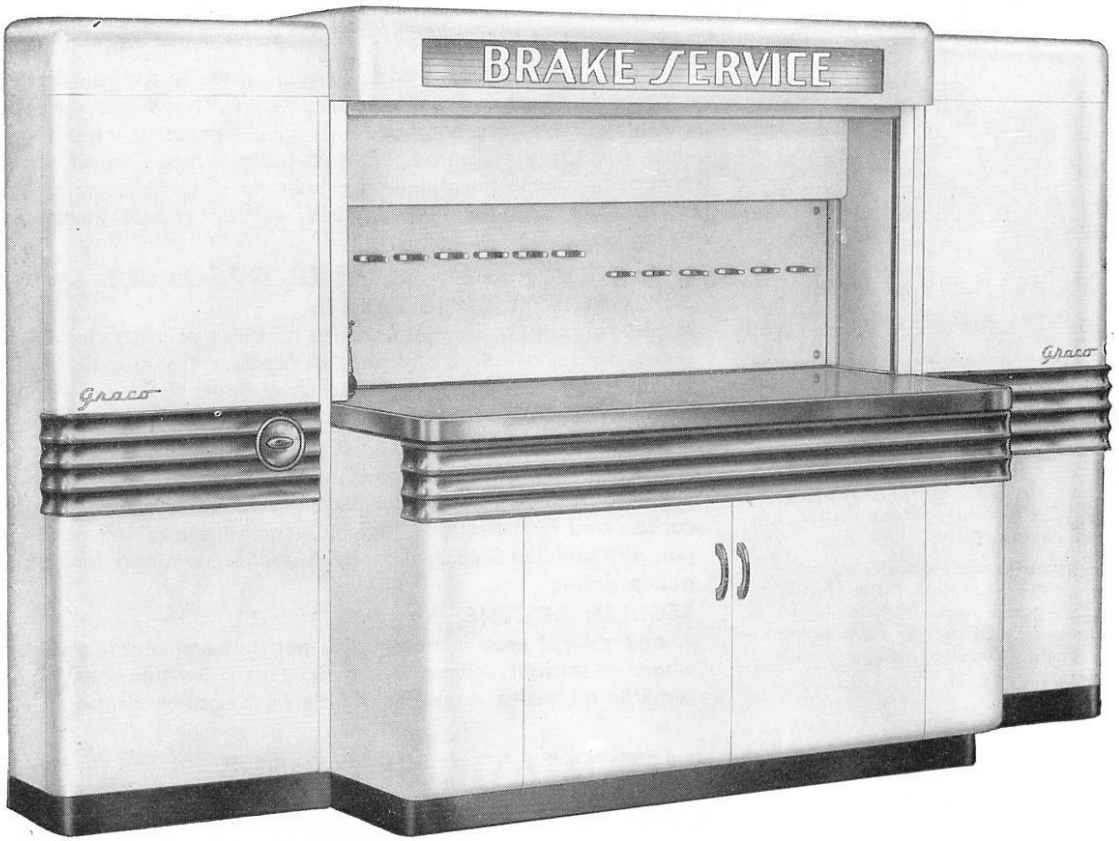
UNDER-BENCH TYPE PARTS CLEANER

C-3032 Size 18" x 10½" x 7¾" deep.



Here's a low-cost convenient parts washer that slides away under the work bench when not in use. Adjustable for all types of benches up to 3" thick. Cover folds back over bench acting as a drain. Easily lifted out false bottom traps sludge in bottom of cleaner.

DE LUXE SERVICE MERCHANDISER



For Customer EYE-APPEAL

•

A PLACE FOR EVERY TOOL

•

Saves Time

•

Steps UP EFFICIENCY

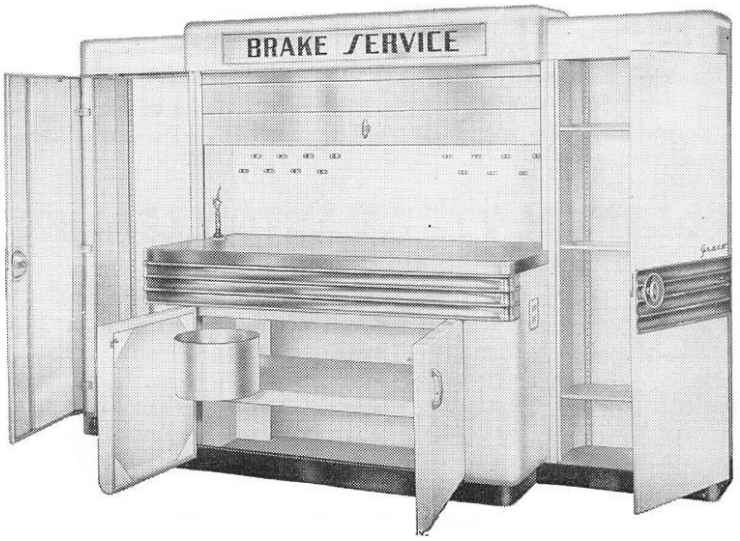
•

Locked Compartments

MT-295

Deluxe Service Merchandiser. Wt. 684 lbs., F.O.B. Minneapolis, Minn.

Picture how you could departmentalize your shop with several of these handsome units. Their installation usually improves work standards and increases customer confidence. Practical service merchandisers like these form the work center for each specialized department. They are available with your selection of eleven different head signs as follows: "Brake Service"; "Carburetor"; "Clutch-Transmission"; "Electrical"; Hydradrive"; "Motor Tune-Up"; "Radio Service"; "Rear Axle"; "Shock Absorber"; "Steering Gear"; "Wheel Alignment"; and plain. Be sure and specify your selection on your order.



FEATURES—

- Fluorescent lighting in head sign panel also illuminates work bench. Complete electrical wiring including duplex receptacle.
- Roll-away aluminum curtain has lock to protect tools in center compartment.
- Roomy compartment below the work bench for extra storage space.
- Dimensions: Length, 108 in.; height, 68 in.; depth, 27 in.
- Sturdy, white-enameled cabinet with polished aluminum trim.
- Double outlet for electric power tools and trouble light.
- Built-in, swivelling parts washer.
- Wooden center panel. Eight large and eight small clips for hanging tools in desired position on panel.
- 6 ft. air hose and blow gun for cleaning work bench and parts.
- Left side cabinet, with lock, for shop coats, creepers, car standards, and other equipment. Built-in pilaster slots for additional shelves (shelves for this cabinet not furnished).
- Over 11 sq. ft., heavy-gauge steel work table, heavily reinforced with wood, provides extra large work space and ample head room. Vise is easily attached to table top.
- Right side cabinet, with lock, has three shelves for fender and seat covers, wiping rags, coveralls, oil cans, gauges, and similar service necessities.

MODERN • ATTRACTIVE WORK BENCHES

Brings SYSTEM AND EFFICIENCY To Any Service Department

Here is a man-sized, extra strong bench that will add attractive style and appearance to your shop; yet stand up under the toughest, every-day service. It is low enough to fit under most windows and is equipped with built-in parts washer, 6 ft. air hose with blower valve and wooden back panel for easy changing tool clips.

MT-296
Low-Back Deluxe Bench. Weight 340 lbs., F.O.B. Minneapolis, Minnesota. Size: 60" long, 45½" high, and 28½" deep.

MT-297
Portable Work Bench. Weight 170 lbs., F.O.B. Detroit, Michigan.

PORTO-BENCH

Time-Saving Portable

Many shops prefer a handy portable work bench so the mechanic moves up to the car to be serviced ready to perform an entire service. Mounted on large wheels in back and large front casters, this bench is easy to maneuver yet can be securely held in position with built-in-brake.

FEATURES:

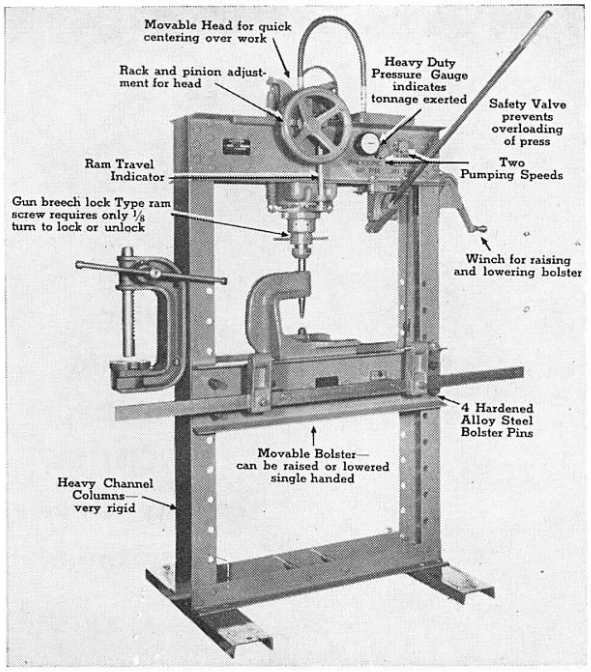
Sturdy, steel work bench top with ¾" rim on three sides. Four square feet of work space. Vise (not furnished) can be easily attached.

Detachable parts washer. 9" dia. Lifts out easily for cleaning. Two drawers. 14" x 14"", for tools and other service and repair needs. Shelf and ample storage space for additional tools, wheel bearing packers, oil cans, spark plugs, points, oil filters and other replacements parts.

Two 10", rubber-tired back wheels with brakes. Two front casters. Rubber bumpers at each corner prevent injury to unit from "collisions" on shop floor.

Lock bar slips through drawer handles and fastens with padlock (padlock not furnished).

Dimensions: Height, 35 in.; length, 38 in.; width, 24 in.


Movable Head for quick centering over work
Rack and pinion adjustment for head
Heavy Duty Pressure Gauge indicates tonnage exerted
Safety Valve prevents overloading of press
Ram Travel Indicator
Two Pumping Speeds
Gun breech lock Type ram screw requires only ⅛ turn to lock or unlock
Winch for raising and lowering bolster
4 Hardened Alloy Steel Bolster Pins
Movable Bolster—can be raised or lowered single handed
Heavy Channel Columns—very rigid

MX-320

60 TON HYDRAULIC PRESS

MX-320 *Press Only*

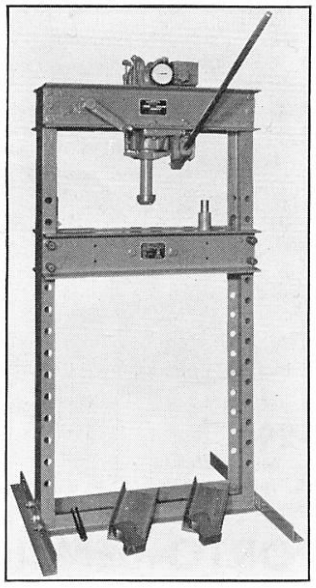
Ring Gear Riveting Fixture, Test Center Attachment and Two Ton Hand Press, available as extra equipment.

SPECIFICATIONS

Height to top of frame...77"	Main Piston Travel ..... 7"
Height over all .....94"	Ram Screw Travel .....6"
Width between columns..37"	Total Ram Adjustment ....13"
Width over all .....52"	Side Columns—
Feet — length .....36"	7" "I" Beam ...Thick Web
Width between bolster	Head Rails—
(table) channels ..... 7"	10" Channel ....Thick Web
Bolster travel .....36"	Work bolster—
Maximum Distance—	10" Channel ....Thick Web
Ram to Bolster .....37"	Shipping weight ....1500 lbs.

Standard Equipment—2—1½" x 5" x 11" Steel Parallels
2—1½" x 3" x 5½" Double V Blocks

Truck and Bus service requires the use of a fast powerful hydraulic press. Two pumping speeds, adjustable work head, long ram and screw travel, gun breech, locktype ram and substantial I beam construction are just a few features of this quality press.



MX-244

40 TON HYDRAULIC PRESS

MX-244 Complete with 3" and 7" rams.

SPECIFICATIONS

Height to top frame .....72"	Ram Travel ..... 7"
Width between columns..31⅝"	Side Columns ....7" Channels
Width between	Head Rails—
bolster channels ..... 7"	7" Channels ....Thick Web
Bolster Travel .....42"	Bolster—
Maximum distance—	7" Channels ....Thick Web
ram to bolster .....44½"	Shipping Weight .....840 lbs.

Automatic shift, dual pump brings the ram to the work fast then shifts to slow powerful travel. This avoids necessity of always changing bolsters when changing jobs. This press is suitable for passenger car service. Truck and bus service requires a 60 ton press such as MX-320 illustrated above.

RING GEAR RIVETING FIXTURE

MX-245 For all presses.

Cold rivet ring gears in accordance with axle manufacturer's specifications. Specify actual distance between bolster Channels when ordering for press now in your shop.

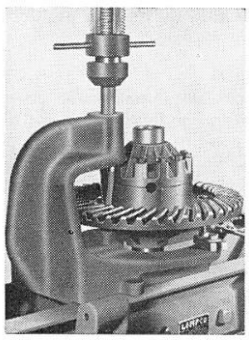
HAND PRESS — WALL TYPE

MX-243 Stroke 11¾"—Clearance 5".

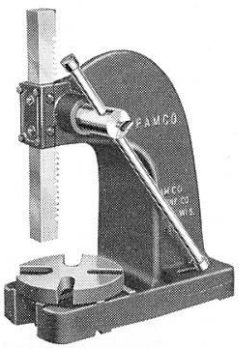
Equip your shop with a wall type press (illustrated on 60 ton press above) and avoid congestion on your heavier presses.

HAND PRESS — BENCH TYPE

MX-242 Famco 2-Ton Capacity.



MX-245



MX-242

SPECIFICATIONS

Diameter of Work	13"
Clearance over Base	8½"
Clearance over Plate	7¾"
Ram	1¼" x 1¼" x 14"
Height Overall	17"
Base	6¾" x 17"

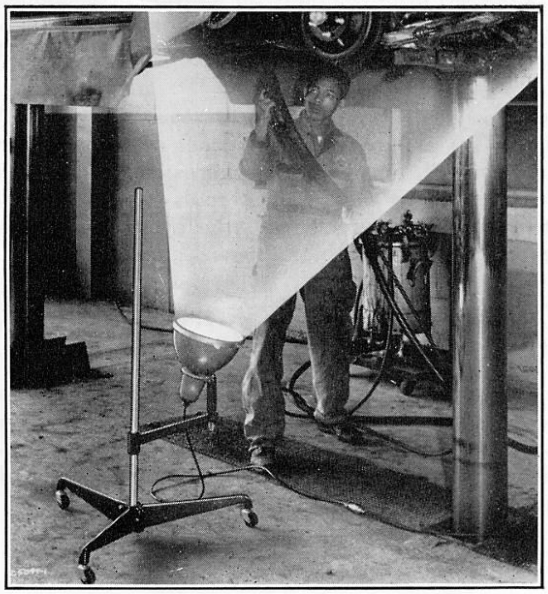
MECHANIC'S TOOL TOTER

C-848 Size 25" wide, 17" deep and 32" high.

Mechanics are more efficient when equipped with rugged tool toters like these — for they can roll right up to the job with all their tools at their finger tips. There is no more chasing back and forth from a stationary work bench to the job. Toters are made of heavy gauge steel, with reinforced corners and ends, and finished in an attractive neutral gray crackle paint that blends well with most modern color schemes. Shipped individually in fitted cartons. Shipping weight 90 pounds.

Equipped With Locking Steel Door

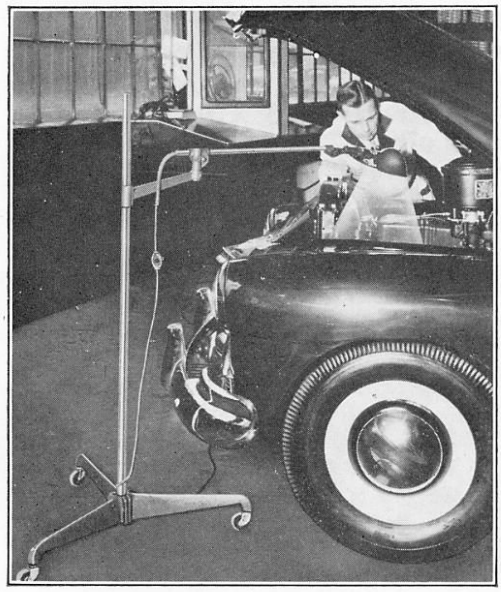
A steel door that folds down to completely cover the drawers and storage compartment is fitted with a dependable cylinder lock. Two keys are supplied.



FLASH PROOF UNDERCOATING LIGHT

C-838 For General Use.

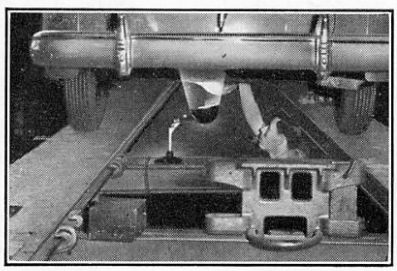
Every shop providing the very popular and profitable "undercoating" service needs one or more of these portable safety lights to help assure a good job, efficiently performed. The vapor-proof reflector is easily cleaned and protects 200 watt bulb from undercoating material. Horizontal arm has automatic spring tension and is movable up or down 48" vertical upright with extreme ease. Light is fitted with 25 feet of approved electric cable and is finished in attractive red paint. (200 watt bulb not supplied.) Also very helpful and effective for Lubrication and Front-end Alignment Departments.



"GARAGE-MAN" SHOP LIGHTS PUT THE LIGHT WHERE NEEDED—AND KEEPS IT THERE

C-684 Portable all-purpose Sr. light.

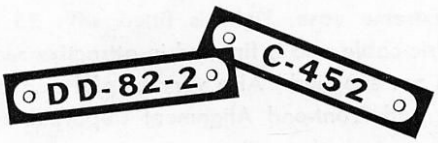
C-806 Portable limited quarters Jr. light.



Service shop efficiency can be increased by providing proper specialized lighting aids. The Senior is ideal for working on engines, installing radios, heaters, body work, etc. The Jr. light is especially well liked by front end men working in the new pit installations.

EACH STENCIL IS AN EXACT SILHOUETTE OF A TOOL

You can easily paint neat, accurate silhouettes of each of your essential special tools on your preferred type of tool board when you use these stencil sets. Each stencil is die stamped from a special rubber adhesive coated paper, which will stick to a board without any individual gluing or bother. Merely mount them on your board in your preferred arrangement — spray paint the board with an all-over bright color — then pick off the paper stencils while the paint is still wet. See detail instructions on next page. Silhouette adhesive is protected until ready for use, with a plain paper backing that is stripped off the paper silhouette just before sticking it to the tool board, similar to a tire patch. Each paper silhouette is imprinted with the tool number it is used to identify.



Actual Size of Tags

PAPER MASK SILHOUETTE STENCIL SETS!

For Making Attractive Tool Boards!

STENCIL SETS AVAILABLE FOR ESSENTIAL TOOL GROUPS ONLY!

KF-41 Contains approximately 100 individual silhouettes of Kaiser-Frazer Special Service Tools. (Hydra-Matic Tools not included — see KF-136 Stencil Set.) Supplied complete with metal tool number tags and hanger hooks.

KF-138 Contains approximately 20 individual silhouettes of Henry "J" Special Service Tools. Supplied complete with metal tool number tags and hanger hooks. (Balance of silhouettes tags and hooks included in KF-41 Set.)

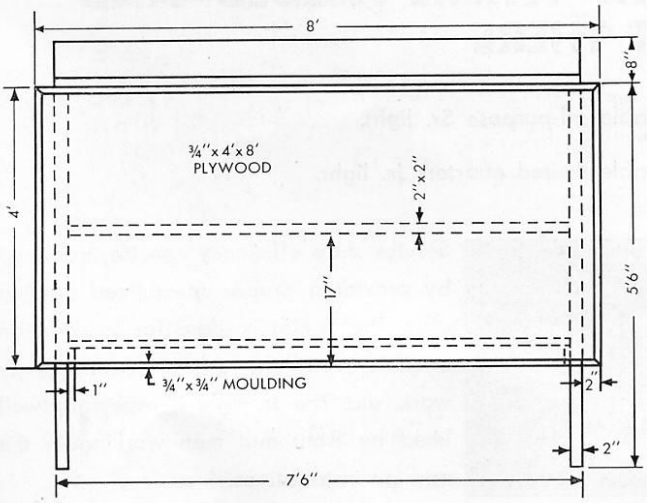
KF-136 Contains approximately 50 individual silhouettes of Kaiser-Frazer Hydra-Matic transmission service tools. Supplied complete with metal tool number tags and hanger hooks.

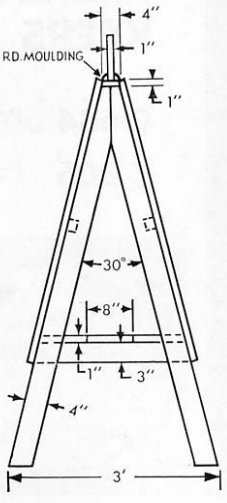
Stencil sets contain an individual silhouette for each essential tool: A complete set of hanger hooks, a set of tool number metal tags, sign stencil, two sheets of plain stencil paper (so you can cut out stencils for any standard tools you now have), and complete installation instructions. Order by set number as listed above. Extra sheets of plain stencil paper available.

METAL TOOL NUMBER TAGS INCLUDED IN EACH STENCIL SET

Use these tags and your men will be able to easily identify all your special tools by the same tool number shown in official Kaiser-Frazer shop manuals. Tags are made of non-rusting aluminum with contrasting numerals clearly anodized in contrasting color.

DOUBLE-SIDED TOOL BOARD CAN BE BUILT FROM THESE STANDARD MATERIALS

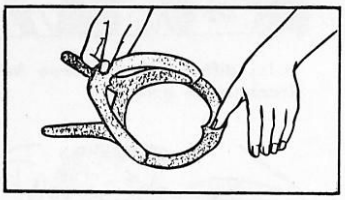




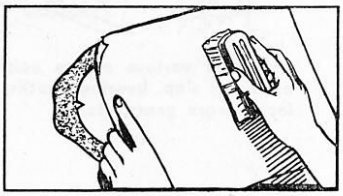
2 pieces 4' x 8' x ¾" Plywood
2 pieces 2" x 4" x 12' White Pine
2 pieces 2" x 2" x 7'6" White Pine
2 pieces 1" x 3" x 30" White Pine
4 pieces 1" x 8" x 7'6" White Pine
1 piece 1" x 4" x 8' White Pine
2 pieces ¾" x 7'6" ¼ Round Pine Moulding
4 pieces ¾" x ¾" x 50" Aluminum Moulding
4 pieces ¾" x ¾" x 98" Aluminum Moulding
1 Lb. #10 Finishing Nails
1 Lb. #6 Common Nails
36 #8 x 1¾" Flat Head Wood Screws
2 Qts. White Lacquer
2 Qts. Motor Car Red Lacquer

How to Apply PAPER MASK SILHOUETTES

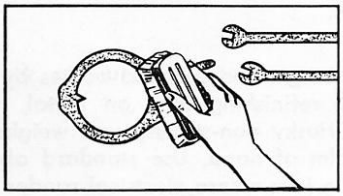
Tool board should be filled with shellac or primer, then painted with 2 coats of an all-over light colored paint. Sand smooth, be sure board is free of dust as dust will kill tack of stencil adhesive. Lay board flat so that paper silhouettes can be placed flat on it in a neat, orderly arrangement. Do this before removing the adhesive protector paper to be sure all tools will fit in space provided and that a proper arrangement is decided before stencils are stuck to the board. A few vertical and parallel pencil or chalk lines drawn on your board will help you arrange the silhouettes straight with the edges of the board.



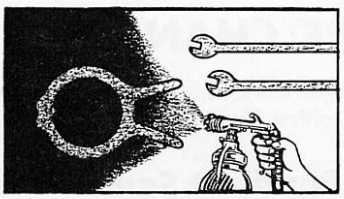
Remove crepe paper to expose adhesive before applying stencil.



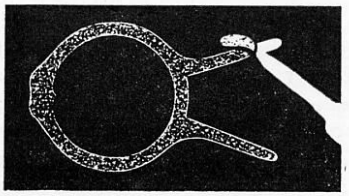
Seal stencil mask to board by placing a plain piece of paper (not newsprint) over top of stencil and rubbing vigorously with dry, stiff fiber bristle hand brush supplied.



Give all edges of paper stencils a final rub down to seal them tightly to board before spraying background color.

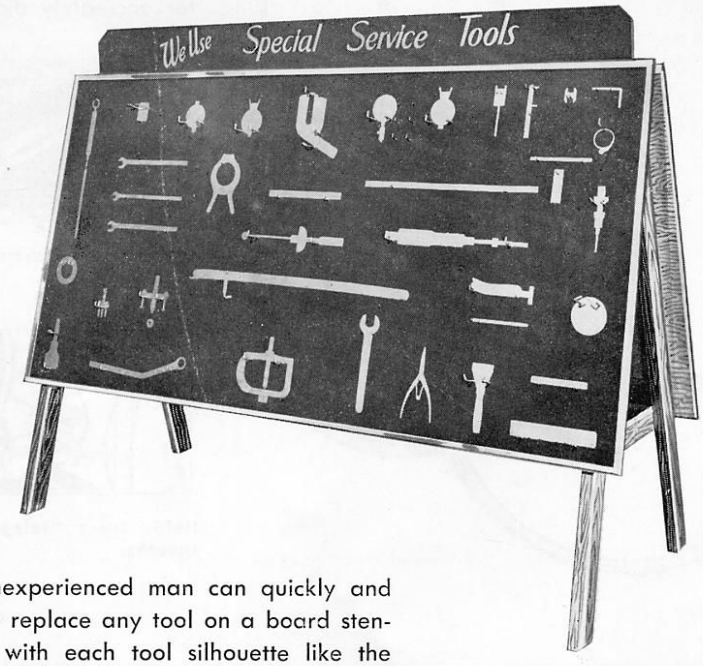


Spray paint complete board with a bright over-all color. Do not flood, but spray succeeding coats, allowing time between coats for paint to set.



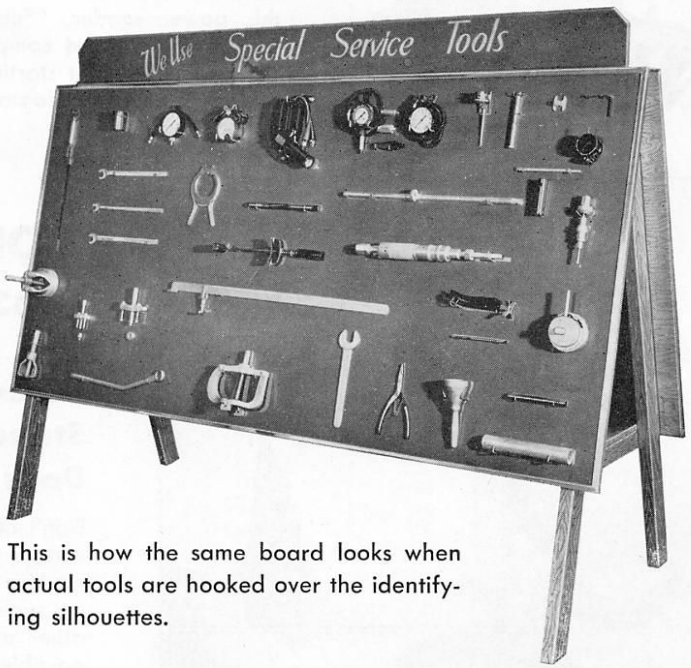
If spraying lacquer, remove paper stencil carefully while color paint is still wet. If enamel color is used, remove paper stencils as soon as enamel has set.

A Place FOR EVERY TOOL AND EVERY TOOL in its Place



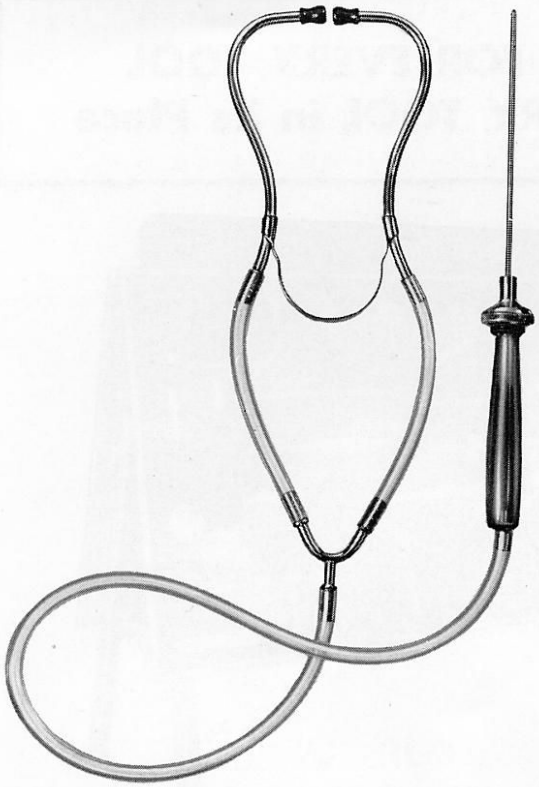
An inexperienced man can quickly and easily replace any tool on a board stenciled with each tool silhouette like the board illustrated above. Double identification is assured by installing the metal tool number tags below each tool. Protect your special tool investment by using this efficient special tool storing method.

THIS IS THE BOARD YOU CAN BUILD USING THE PLANS SHOWN ON THE OPPOSITE PAGE!



This is how the same board looks when actual tools are hooked over the identifying silhouettes.

Complete Tool Boards are NOT SOLD by MILLER Because Customers Can Build Them Locally at LOWER COSTS!



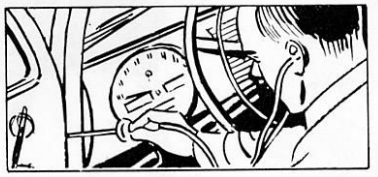
MULTISCOPE SOUND DETECTOR

KF-139 For all cars.

The Multiscope works on the same principle of a doctor's stethoscope. By tracing the intensity of most any trouble sound, you can locate and identify mechanical troubles. It can be a most useful time-saver for accurately diagnosing many automotive service problems.

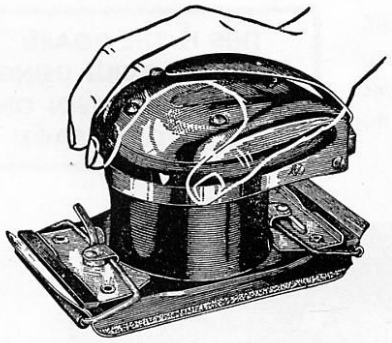
Locates noisy shackles and shock absorbers.

Helps differentiate between Axle and Transmission noises.



Helps trace "telegraphing" body squeaks.

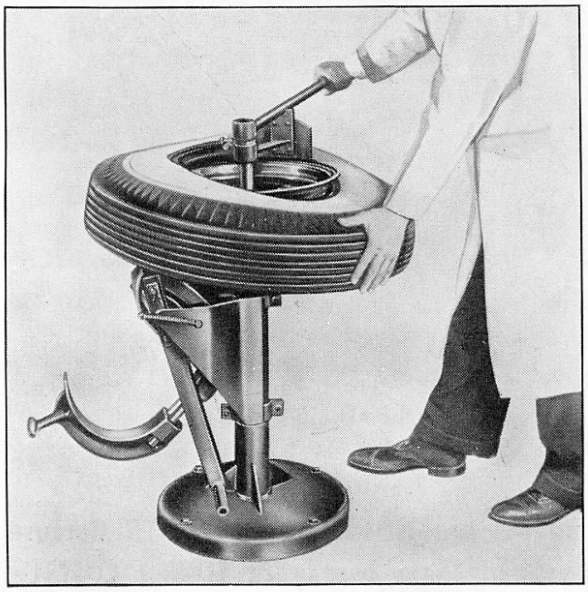
Separates various engine noises such as piston slap, bearing knocks, gasket leaks, worn gears, etc.



MIGHTY-MIDGET, HIGH SPEED, LIGHT WEIGHT AIR SANDER

C-822 Sander complete with adapters.

Save 50% to 75% of hand labor in refinishing wood trimmed bodies by using this power sander. "Feather-edges" spot refinishing jobs on metal, wood, leather, plastic and composition surfaces. Husky non-stalling unit weighs only 3½ pounds. Instant starting trigger fits palm of hand. Use standard abrasive paper. Especially Adaptable to wet sanding jobs where electrical sander might become grounded.



MODERN TIRE CHANGER

C-833 For All Passenger Cars, Including Models Equipped with Super Cushion Tires.

"Breaks" BOTH Beads at Same Time on Standard or Super Cushion Tires. Does Not Mar White Sidewalls

Don't abuse new or old tires by hammering on tires, rims or wheels while attempting to change a tire. Equip now with this modern tire-saving equipment to render efficient tire service on super cushions and other standard tires in keeping with other modern service methods. This machine now makes it possible for you to sell the type of expert tire service your customer expects when he brings his car home for service. Machine requires no special training to operate efficiently. Used by major tire and car manufacturers.

Dozens of experts from the Automotive and Educational fields have cooperated to produce these new books that can help any mechanic be a superior workman.

OUTSTANDING AUTOMOTIVE SERVICE TEXT BOOKS

MT-298 AUTOMOTIVE FUNDAMENTALS

MT-367 AUTOMOTIVE ENGINES — Maintenance and Repair

MT-368 AUTOMOTIVE SUSPENSIONS — Steering and Wheel Alignment

All Three Books Make Ideal Incentive Gifts For Novice Or Expert Mechanics

MT-298

This book is divided into two parts, "Fundamentals of Science" and "Operating Principles". It provides some elementary physics and a basic knowledge of automotive electricity. Easily understood language is used to explain not only how each automotive unit operates but variations in their designs.

MT-367

Few books in the field of industrial training can begin to match the industry-wide coverage of this excellent volume. It explains service proven practices that leave nothing to trial and error methods. After reading this book procedures that formerly appeared tricky will in comparison be simple and routine.

MT-368

For years there has been a great need for simplification and standardization of theory and practice in the art of wheel alignment. This has now been accomplished by an outstanding group of authorities and set down in this book with such clarity it will amaze even the most experienced service men.

1 Ton Model Shown Above
2 Ton Model Is Similar

RUGER HYDRAULIC FLOOR CRANES MOVE HEAVY LOADS *EASILY – QUICKLY – SAFELY*

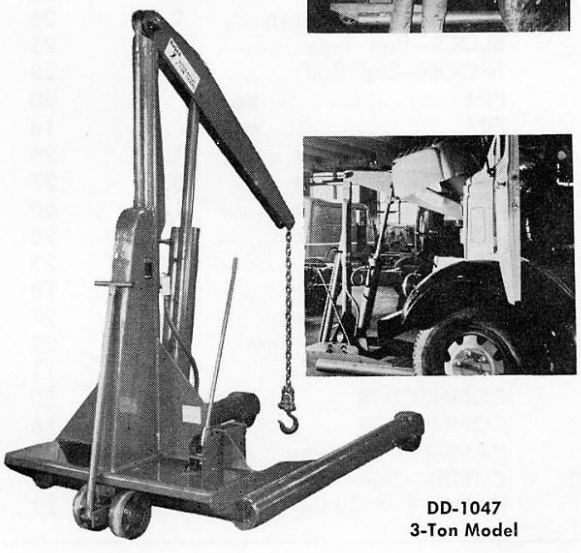
DD-1045 One Ton model, weight 475 lbs.

***DD-1046** Two Ton model, weight 675 lbs.

***DD-1047** Three Ton model, weight 1100 lbs.

*Available with 17" higher mast at slight extra cost.

Heavy lifting and moving of bulky and awkward loads is easy when you use one of these portable cranes. Handle pumps on both forward and backward strokes providing smooth rapid lifting power. Release valve provides close, positive control for fast or slow lowering. Overhang of cantilever arm and the wide spread front supports make it possible to accurately maneuver and spot awkward, bulky loads.



DD-1047
3-Ton Model

EXTENSION BOOMS AVAILABLE FOR EACH MODEL

DD-1017-1 For 1 ton cranes.

DD-1017-2 For 2 ton cranes.

DD-1017-3 For 3 ton cranes.

Extra "reach" and range for higher tiering can be added by attaching a three position extension boom. A single bolt makes boom easy and fast to attach.

"NO-TIP" STABILIZERS PROVIDE EXTRA SAFETY

Pivoted stabilizers built into the underside of each leg, allow crane to pass over floor obstructions but add extra stability when crane is handling maximum loads.

INDEX—By Tool Number

See Latest Price List For Current Prices and Complete Listing of All Miller Tools and Service Parts.
All prices subject to change without notice and net F.O.B. Detroit, Michigan, unless otherwise indicated. All tools will be invoiced at prices prevailing at time of shipment.

Miller Tool No.	TOOL NAME	Unit Price	Illust. on Catalog Page No.
F	UNIT—Body Repair	$152.50	19
FY	UNIT—Body Repair	166.50	19
G	DOOR BAR—Double	69.50	21
H	DOOR BAR—Single	43.50	21
I	UNIT—Rocker Spoon	31.70	21
J	SET—Tubing	14.50	20
K	PRESS—Shop	79.50	18
L	SET—Power Tools	37.50	23
N	SET—Hand Tool	165.40	24
O	SET—Hand Tool	130.60	24
P	SET—Hand Tool	53.65	24
Q	SET—Pick Tools	26.80	25
R	SET—Hand Tools	14.05	24
S	SET—Push-Pull Tools	137.50	29
T	SET—Tubing	16.50	29
U	PRESS—Shop	36.70	20
X	SET—Midget Speedlok	17.80	20
Y	SET—Speedlok Tube	28.50	18
1-E	UNIT—Body Repair	89.50	19
1-V	UNIT—Hydro-Midget	107.75	20
1-VX	UNIT—Hydro-Midget	116.60	20
BU-1	CABINET	43.25	20
D-1	SPOON—Door Panel	6.15	26
FP-1	PUNCH—Straight Finish	1.35	25
GD-1	BLOCK—Low Crown Dolly	4.45	25
JOP-1	TOOL—Offset Pushing	2.50	23
KF-1	ARBOR—Trans. Assy.	2.30	71
MH-1	HAMMER—Magnetic Trim	2.80	27
MSL-1	ADAPTER—Male	1.25	20
PT-1	PICK—Curved, Short	4.95	25
SL-1	ADAPTER—Male	1.90	18
2-B	UNIT—Body Repair	187.50	20
2-BY	UNIT—Body Repair	201.50	20
BH-2	HAMMER—5" Bullet	2.55	27
F-2	SPOON—Driving	5.10	26
FP-2	PUNCH—Curved Finish	1.50	25
GD-2	BLOCK—High Crown	4.45	25
KF-2	PULLER—Steering Arm	4.30	66
MSL-2	ADAPTER—Female	1.75	20
PT-2	PICK—Deep Throat	5.20	25
SL-2	ADAPTER—Female	2.70	18
SP-2	PADDLE—Solder	.45	28
WC-2	IRON—Wide Caulking	1.60	26
3-B	UNIT—Body Repair	517.50	18
3-BY	UNIT—Body Repair	531.50	18
B-3	SPOON—Door Apron	6.15	26
BH-3	HAMMER—Bumping	2.70	27
F-3	TOOL—Fender Beading	5.70	26
FP-3	PUNCH—Hooked	1.50	25
GD-3	BLOCK—High Crown	4.00	25
JMR-3	SPOON—Quarter Panel	3.50	23
JWC-3	IRON—Caulking	2.40	23
KF-3	PULLER—Set Roller Brgs.	27.90	16
MSL-3	TUBE—3" Speedlok	1.15	20
PT-3	PICK—Deep Throat	5.20	25
SP-3	PADDLE—Solder	.60	28
4-A	UNIT—Body Repair	427.50	19
4-AY	UNIT—Body Repair	441.50	19
4-B	JIG—Hydro	247.50	19
BH-4	HAMMER—4" Bumping	2.65	27
BU-4	UNIT—Mobile	147.50	19
FP-4	PUNCH—Piercing	1.45	25
GD-4	BLOCK—Heavy-Duty	4.95	25
JDM-4	SPOON—Drip Moulding	3.20	23
JH-4	HOOK—Fender	2.30	23
JWC-4	IRON—High Crown	2.40	23
KF-4	REMOVER—Camshaft Brgs.	22.30	63
PT-4	TOOL—Top Rail Pick	3.60	25
SL-4	TUBE—4" Speedlok	1.75	18
5-A	UNIT—Body Repair	607.50	18
5-AY	UNIT—Body Repair	621.50	18
BH-5	HAMMER—Bead	3.15	27
BU-5	UNIT—Mobile	238.00	18
E-5	SPOON—Low Crown	2.40	26
GD-5	BLOCK—Shrinking	4.35	25
JWC-5	IRON—Low Crown	2.40	23
KF-5	REMOVER—Clutch Bush.	4.55	42
MSL-5	TUBE—5" Speedlok	1.25	20
PT-5	PICK—Curved, long	6.00	25
WM-5	MALLET—Lignum Vitae	1.35	27
6-HCT	REMOVER—Door Handle	.75	28
6-HPT	TOOL—Door Handle Pin	.90	28
A-6	SPOON—Panel	6.15	26
B-6	SPOON—Cowl Bracket	4.00	26
BH-6	HAMMER—6" Bumping	2.95	27
E-6	SPOON—Surfacing	2.35	26
GD-6	BLOCK—Finger Dolly	4.35	25
JD-6	DOLLY—Power	4.00	23
JHD-6	ADAPTER—Hex	2.50	23
JWB-6	SPOON—Header Panel	3.90	23
JWC-6	IRON—Beveled Caulk	2.40	23
KF-6	BURNISHER—Clutch Bush.	11.40	42
PT-6	PICK—Short Toe	3.60	25
SL-6	TUBE—6" Speedlok Extension	1.95	18
BH-7	HAMMER—Pick	3.15	27
E-7	SPOON—High Crown	2.55	26
GD-7	BLOCK—Rail Type	4.30	25
JTR-7	SPOON—Top Rail	5.40	23
MSL-7	PIN ea.	.10	20
SL-7	PIN ea.	.10	18
PT-7	PICK—Deep Throat	5.20	25
BH-8	HAMMER—Bumping	3.25	27
KF-8	TOOL—Bearing Shell	1.05	60
MSL-8	TUBE—8" Speedlok	1.50	20
PT-8	PICK—Long Tee	5.20	25
SL-8	TUBE—8" Speedlok	2.20	18
BH-9	HAMMER—Cross Peen	3.15	27
JCW-9	SPOON—Quarter Panel	4.20	23
KF-9	GAUGE—Lower Arm	7.20	11
MSL-9	CONNECTOR	1.50	20
SL-9	CONNECTOR	2.40	18
RH-10	HAMMER—Roughing	5.20	27
SMC-10	CUTTER—Sheet Metal	3.60	28
BH-11	HAMMER—Finishing	2.95	27

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Miller Tool No.	TOOL NAME	Unit Price	Illust. on Catalog Page No.
JBP-11	SPOON—Quarter Panel .	3.90	23
BH-12	HAMMER—Serrated Face	2.95	27
DMP-12	PLIERS—Drip Moulding .	5.20	28
JWP-12	SPOON—Panel Pusher . .	4.60	23
MSL-12	TUBE—12" Speedlok . . .	1.75	20
SL-12	TUBE—12" Speedlok . . .	2.70	18
BH-13	HAMMER—Cross Peen . .	3.45	28
KF-13	GAUGE—Fuel Pump	5.20	50
BH-14	HAMMER—Long Pick . . .	3.25	28
FH-14	HOLDER—Flexible File . .	4.65	28
KF-14	INSTALLER—U Joint Flnge	4.60	80
U-14	BLADE—File	2.75	28
KF-15	PULLER—Axle Shaft	6.80	13
KF-16	WRENCH—Brake Cam . .	.55	33
SL-16	TUBE—16" Speedlok . . .	3.10	18
CA-17	RACK—Alignment	373.75	8
KF-20	WRENCH—Overdrive Gov.	2.70	71
MSL-20	TUBE—20" Speedlok . . .	2.30	20
SL-20	TUBE—20" Speedlok . . .	3.50	18
KF-23	REFACER—W/P	9.50	43
KF-24	ENGINE STAND	110.90	64
KF-25	WRENCH—Camber Adj. .	.85	8
C-26	REAMER—Piston Pin	10.60	56
KF-26	PULLER—Steering Wheel.	4.30	67
KF-27	DRIVER—Valve Guide . .	7.50	54
KF-28	SLEEVE—Oil Seal Inst. . .	4.30	62
DD-29	WRENCH—Tappet Adj. .	2.15	53
KF-29	PULLER—W/P Impeller . .	27.00	43
KF-30	HOLDER—Valve Tappet .	1.05	53
KF-31	PULLER—Vibration Damper	5.25	62
KF-32	REMOVER—King Pin Bush.	4.10	10
KF-33	REMOVER—Hood Sprg. .	6.05	31
KF-34	WRENCH—Steering Gear	4.10	66
KF-35	WRENCH—Tappet ¾" . .	1.45	53
MTU-35	SCALE—Checking	6.00	49
KF-36	WRENCH—Tappet ⅞". . .	1.45	53
MTU-36	SCALE—Checking	6.00	49
BT-37	TRAM—Body, Checking .	9.00	28
BU-37	GUIDE—Pull Arm	.70	20
KF-37	WRENCH—Tappet 9/16" . .	1.15	53
BU-38	ASSEMBLY—Base	2.60	20
C-38	REAMER—Valve Guide . .	4.55	53
KF-38	GAUGE—Clutch Pedal . .	2.65	40
BU-39	TOE—Jack Body	.95	20
BU-40	TOE—Ram Extension . . .	.85	20
KF-40	KIT—Carb. Overhaul . . .	19.70	49
BU-41	BASE—Jack	1.15	20
KF-41	SET—Stencil	18.35	86
BU-42	CAP—Vee Notch	.75	20
KF-42	WRENCH—Bezel Nut . . .	1.75	31
BU-43	HEAD—Rubber	1.60	20
KF-43	WRENCH—Control Nut .	1.75	31
BU-44	TOE—Offset Spreading .	1.10	20
KF-44	DRIVER—Oil Seal	3.45	62
BU-45	PLUG—Ram Base	.95	20
BU-46	NIPPLE—Short	.55	20
KF-46	PLIERS—Brake Spring . . .	2.50	40
BU-47	COUPLING—Short	.65	20
BU-48	COUPLING—Long	.75	20
BU-50	TUBE—20"	1.55	20
BU-52	TUBE—12"	1.10	20
KF-52	REAMER SET—Tappet . . .	18.40	54
BU-53	TUBE—3"	.50	20
BU-55	TUBE—5"	.65	20
KF-57	REAMER—Valve Guide Bore	3.80	54
BU-58	TUBE—8"	.90	20
KF-58	COUNTERBORING SET—Valve Seat	11.10	52
KF-59	DRIVERS—Pr., St'g Lever Pin	6.35	66
BU-60	ADJUSTER—Length	7.00	20
KF-60	REMOVER—Spring Bush..	5.35	65
KF-61	GAUGE—Valve Length . .	3.40	51
KF-63	CUTTER—70° Valve Seat	3.40	52
KF-65	TOOL—Diaphragm Flexing	.15	50
KF-66	REMOVER—Oil Seal . . .	3.00	50
KF-68	REMOVER—Horn Ring . .	2.30	67
KF-69	GAUGE—Gear Shift Lever	2.60	70
KF-70	FIXTURE—Checking	5.65	75
KF-71	REMOVER—Snap Ring .	2.20	75
KF-72	REMOVER—Retainer Ring	2.70	74
KF-73	COMPRESSOR—Oil Del. Rings	4.05	74
KF-74	HOLDER—Planet Carrier	3.65	74
75-AS	REAMER—King Pin	26.15	56 & 58
75-BL	BLADE—Replacement . . .	14.45	58
75-SL	REAMER—King Pin	30.75	58
BU-75	SPREADER	11.50	20
MX-75	BRUSH—Batt. Term. . . .	2.00	46
H-76	CLEANER—Parts	144.50	81
KF-76	GAUGE—Gear Backlash.	4.50	78
KF-77	GAUGE—Rear Servo . . .	1.35	73
H-78	CLEANER—Parts	184.50	81
KF-78	GAUGE—Throttle Lever..	3.90	73
KF-79	TOOL—Throttle Bending.	7.30	72
KF-79-A	TOOL—Throttle Bending.	7.30	72
KF-80	DRIVER—Oil Seal	7.25	76
MH-80	REFACER—Valve . . . . . (Spec. motor prices quoted on application)	275.00	55
81-AS	REAMER—Piston Pin	26.15	56 & 58
81-BL	BLADE—Replacement . . .	14.45	58
H-81	CLEANER—Parts	259.50	81
KF-81	RIVETING SET	6.40	77
DD-82-1	REAMER—Piston Pin	11.50	56
DD-82-2	REAMER—Piston Pin	12.50	56
KF-84	SOCKET SET	3.20	74
85-AS	REAMER—Piston Pin	27.05	56 & 58
85-BL	BLADE—Replacement . . .	15.50	58
KF-88	BRACKET—Retainer	1.00	77

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Miller Tool No.	TOOL NAME	Unit Price	Illust. on Catalog Page No.
KF-89	SPACER—Speedometer Gear	1.15	77
BU-90	BOX—Metal Tool	8.20	19
KF-90	ROD—Dial Indicator	1.75	76
BU-91	ADAPTER—Hex	1.05	20
KF-91	PINS—Linkage, Pr.	1.30	72
BU-92	SPOON—Quarter Panel	1.90	20
KF-92	GAUGE—Front Servo	8.55	72
BU-93	SPOON—Metal Top	1.60	20
KF-93	DRIVER—Frt Oil Seal	8.35	75
KF-94	GAUGE—Oil Pressure	6.25	73
KF-95	GUIDE—End Play	6.85	76
KF-96	TOOL—Band Adj.	21.50	73
KF-96-A	TOOL—Band Adj.	21.50	73
KF-97	PLIERS—Snap Ring	4.25	75
KF-98	SET—Dial Indicator	17.75	78
BU-99	HOLDER—Case & Tool	23.25	20
KF-99	WRENCH—0 to 50 ft. lb.	7.20	51 & 76
KF-99-S	WRENCH—Sensory Tension	27.75	51
W-99	GAUGE SET—Ring Gear	67.30	17
BU-100	BARS—Door	11.75	19
KF-100	STAND—Trans. Holding	28.25	70
BU-101	ASSEMBLIES—Bolt	1.45	19
KF-101	REMOVER—Horn Button	2.00	67
W-101-13	BLOCK—Gauge, Size "E" for 1951 models	3.75	17
KF-102	GRINDER—Valve Seat	110.50	52
KF-103	REMOV. & INST.—Brg. Oil Guard	9.95	62
KF-104	FIXTURE—Engine Support	15.95	72
BU-105	STANDS—Holding	25.60	19
BU-106	PLATFORM—Jacking	29.75	19
KF-106	LO-JACK—Trans.	94.50	69
KF-107	JACK—Single Stage Trans.	169.50	68
KF-108	JACK—Two Stage, Trans.	214.50	68
109-BL	BLADE—Replacement	19.30	58
109-SL	REAMER—Steering Bush.	40.55	58
KF-109	SET—30 Hydra-Matic Inspection Tools	196.90	79
BU-110	SUPPORT—Center	5.60	19
KF-110	SET—7 Hydra-Matic Tools	50.00	79
KF-111	SET—23 Hydra-Matic Tools	146.90	79
KF-113	KIT—Impeller Puller	7.55	43
KF-115	KIT—Crankshaft Dowel	26.80	78
W-115	PULLER—Fan Hub	4.60	43
W-116	PULLER—Impeller—4 cyl.	11.20	43
KF-118	GAUGE—Lower Arm	7.75	11
C-119	INDICATOR—Cyl. Bore	21.00	56
KF-119	PULLER—Pitman Arm	7.50	66
BU-120	ADAPTER—Clamp Stud	1.90	19
KF-122	GAUGE—Upper Arm	12.65	11
KF-123	KIT—Adapter	2.30	41
BU-125	ADAPTER—Clamp with	14.25	19
W-126	DRIVER—Pinion Brg. Cup	3.45	14
KF-128	DRIVER—Trans. Pin. Brg.	3.75	15, 71 & 77
W-129	SPREADER—Diff. Housing	25.30	16
KF-130	ADAPTER SET—For KF-24 Stand.	21.50	64
KF-131	ADAPTER SET—For KF-24 Stand	14.40	64
KF-133	COMPRESSOR—Release Spring	7.75	79
KF-134	ALIGNER—Brake Bracket	3.00	79
KF-135	INSTALLER—Outer Seal	1.00	79
KF-136	STENCIL SET	8.50	86
KF-137	REAMER SET—Valve Tappet	14.95	54
KF-138	STENCIL SET	6.50	86
KF-139	MULTISCOPE—Sound Detector	5.00	88
BU-142	ASSEMBLY—Screw	.80	19
W-142	DRIVER—Diff. Brg. Cone	2.60	15
W-147	DRIVER—Pin. Oil Seal	3.00	14
W-148	CLAMP—U Joint Brg.	9.95	80
W-165	PULLER—Oil Seal	6.90	14 & 70
W-172	PULLER—Crankshaft Gear	7.75	62
W-175	PULLER—Fan Pulley	6.75	62
W-177	DRIVER—Valve Guide 4 cyl.	3.10	55
W-186	DRIVER—Oil Seal	2.70	14
W-188	DRIVER—Bearing Cone	2.60	15
W-189	GAUGE—Cyl. Compression	12.40	50
W-193	ARBOR—Cluster Gear	2.00	71
BU-200	JACK—3 ton	42.75	20
BU-201	SPOON—13" Rocker	8.80	19
BU-202	SPOON—18" Rocker	11.60	21
W-207	DRIVER—Pin. Brg. Inst.	2.90	14
W-213	WRENCH—Brake Adjt.	1.80	33
BU-215	ADJUSTER—Spoon Ram	1.50	19
W-215	DRIVER—Valve Guide, 6 cyl.	3.45	55
BU-220	BASE—Rocker Spoon	2.80	19
BU-225	HINGE—Spoon Ram	1.80	19
BU-230	ADAPTER—Link Hinge	1.20	19
C-232	PULLER—Steer'n Wheel	11.20	67
MX-242	PRESS—Hand	48.00	84
MX-243	PRESS—Arbor	86.00	84
MX-244	PRESS—Hydraulic	425.00	84
MX-245	FIXTURE—Riveting	132.00	84
C-249	REAMER—Valve Guide	4.50	53
BU-250	ASSEMBLY—Turnbuckle	4.20	19
C-259	TOOL—Piston Ring	2.95	61
C-260	TOOL—Piston Ring	2.95	61
C-261	TOOL—Piston Ring	2.95	61
C-262	TOOL—Piston Ring	2.95	61
C-263	TOOL—Piston Ring	2.95	61
C-264	TOOL—Piston Ring	2.95	61
C-266	TOOL—Piston Ring	2.95	61
MT-270	BUFFER—Polishing	77.95	32

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BU-276	BOLTS—Connecting (5) .	1.00	20
MT-276	PURGER—Radiator	349.00	44
MT-276	PURGITE—for MT-276 ..	24.00	44
MT-281	IMPACTOOL	120.00	60
MT-281-B	IMPACTOOL	139.25	60
MT-281-C	IMPACTOOL	151.25	60
MT-281-D	IMPACTOOL	190.75	60
MT-282	IMPACTOOL	180.00	60
MT-282-B	IMPACTOOL	214.45	60
MT-282-C	IMPACTOOL	228.25	60
MT-282-D	IMPACTOOL	273.05	60
MT-287	DETERGENT— Car Washer 20 lb.	11.90	81
MT-288	DETERGENT— Car Washer 80 lb. ...	45.30	81
MT-289	TABLE—Wheel Align. ...	339.00	7
MT-290	GRINDER—Brake Shoe ..	465.00	36
MT-290-44	SLEEVE—Grind. 4"x6" ..	1.10	36
MT-290-44-A	SLEEVE—Steel 4"x6" ..	1.55	36
MT-291	GRINDER—Brake Shoe ..	525.00	36
MT-292	GRINDER—Brake Shoe ..	545.00	36
MT-292-44-D	SLEEVE—Grind. 4"x8¼"	1.60	36
MT-292-44-E	SLEEVE—Steel 4"x8¼" .	1.80	36
MT-293	GRINDER—Brake Shoe .	280.00	36
MT-293-44-B	SLEEVE—Grind. 4"x4" ..	.75	36
MT-293-44-C	SLEEVE—Steel 4"x4" ...	1.20	36
MT-294	GRINDER—Brake Shoe ..	315.00	36
MT-295	MERCHANDISER—Serv. .	370.00	82
MT-296	BENCH—Work	170.00	83
MT-297	BENCH—Work	113.50	83
MT-298	BOOK—Auto Fund	4.90	89
MT-303	MOP—Car Washing	8.00	81
MT-304	REFILL—MT-303 Mop ...	4.50	81
BU-300	JACK—Hyd. 5 Ton	38.75	22
MT-310	TESTER—Batt. Chg.	16.50	46
C-311	GUN—Rad. Flush	9.80	44
MT-314	TESTER—Bat. Cap	29.50	46
MT-315	THERMO-SIGNAL	14.50	46
C-319	PULLER—Wheel Hub ...	10.35	13
MX-320	PRESS—Hydraulic	750.00	84
MT-351	DELINER—Brake Shoe ..	175.00	39
MT-351-M	MOTOR—for MT-351 ...	59.80	39
MT-352	BELTS—for MT-351	7.50	39
MT-353	COLLECTOR— Dust for MT-351	80.00	39
MT-353-M	MOTOR for MT-353	29.90	39
MT-358	LATHE—Brake Drum	498.20	35
MT-359	LATHE—Brake Drum	760.50	35
C-360	ARBOR—Clutch Plate ...	8.00	40
MT-360	LATHE—Brake Drum	1180.00	35
MT-361	WASHER—Car	166.90	81
C-362	REFILLER—Brake Cyl. ...	6.75	33
MT-362	WASHER—Car	147.90	81
MT-363	WASHER—Car & Truck..	179.75	81
MT-364	DETERGENT—25#	14.75	81
MT-365	DETERGENT—100#	55.25	81
MT-367	BOOK—Auto Engines ...	4.50	89
MT-368	BOOK—Auto Suspensions	4.50	89

Miller Tool No.	TOOL NAME	Unit Price	Illust. on Catalog Page No.
C-369	REAMER—King Pin	13.80	10
C-385	COMPRESSOR—Piston Ring	1.15	61
C-389	SET of 10, Piston Ring .. (Specify sizes)	28.75	61
C-390	SET of 5, Piston Ring ... (Specify sizes)	13.95	61
DD-398	WEE GEE BOARD	56.50	9
BU-400	JACK—7½ Ton Hyd. ...	52.50	22
C-408	TOOL—Sprg. Lub.	2.60	65
C-413	DRIVER—Axle Shaft	2.75	13
C-416	CLAMPS—Brake Piston ..	1.50	40
C-425	GAUGE—Vacuum	4.55	50
DD-425	GASOMETER—with Univ. Fittings	13.50	49
DD-428	GAUGE—Camber	52.25	9
C-430	INDICATOR SET— with Dial	17.00	12
C-430-A	INDICATOR SET— less Dial	6.75	12
DD-435	TURNTABLES—Frt-end pr.	75.00	9
C-437	DRIVERS—Lub. Fitting pr.	.90	11
444	GROWLER—Arm. Test. ..	47.50	45
C-452	PULLER—U Joint Flnge ..	4.60	80
C-453	PULLER—Gen. Pulley ...	11.20	47
C-466	TOOL—Piston Ring	2.95	61
C-467	TOOL—Piston Ring	2.95	61
C-468	TOOL—Piston Ring	2.95	61
C-469	TOOL—Piston Ring	2.95	61
C-482	LIFTER—Valve Sprg.	2.60	55
BU-500	JACK—Hyd. 12½ Ton ..	74.50	22
C-518	TOOL—Piston Ring	2.95	61
C-519	TOOL—Piston Ring	2.95	61
C-520	TOOL—Piston Ring	2.95	61
C-521	TOOL—Piston Ring	2.95	61
C-524	WRENCH—100 ft. lb. ...	18.95	51
C-533	TOOL—Door handle ...	1.00	30
C-537	VOLTMETER	12.95	45
C-551	REFACER—W/P	8.65	43
C-552	JIG—U Joint Pin	7.50	80
C-557	CLAMP—Brake Lining ..	8.50	34
C-558	CLAMP—Brake Lining ..	13.50	34
C-562	MACHINE—Riveting	139.00	34
BU-575	CAP RAM	1.40	29
BU-580	BASE—Hydraulic Jack ..	2.10	29
BU-585	PLUG—Ram Base	1.95	19
C-585-C	FIXTURE—Clutch Adj. ...	38.55	41
C-647	TESTER—Spring	18.95	42
C-650	HOSE—Brake Bleeder ..	.25	33
C-674	TOOL SET—Piston Ring .	11.50	61
C-684	LIGHT—Port. Shop	24.90	85
C-685	WRENCH—300 in. lb. ..	16.85	51
C-690	GAUGE—Piston Fit	7.70	61
BU-700	BASE—Large Rubber ...	4.30	20
BU-705	BASE—Small Rubber ...	3.20	20
C-707	TOOL—Distributor Adj. .	21.30	48
C-707-A	TOOL—C-707 Less Dial .	9.20	48
BU-710	ADJUSTER—Length	9.50	20
C-711	TOOL SET—Rod Bend. ..	12.10	57

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C-715	TOOL—Tire Remov.	7.55	12
BU-725	NIPPLES—Short	.65	20
BU-726	TUBING—5" Extension ..	.95	20
BU-727	TUBING—6" Extension ..	1.00	19
BU-728	TUBING—8" Extension ..	1.10	20
BU-729	TUBING—12" Extension .	1.35	19
BU-730	TUBING—20" Extension .	2.30	19
BU-731	COUPLINGS—Heavy Duty	.75	20
C-735	BALANCER—Wheel	45.00	8
C-744	LIGHT—Control Check ..	2.00	71
BU-750	SPREADER—Power (Less Jack)	27.75	22
C-756	CLEANER—Valve Guide .	1.35	53
C-763	SWITCH—Starter	2.30	48
C-766	CLEANER—Valve Guide .	1.65	53
C-770	UNDERCUTTER—Arm. ..	23.50	45
C-770-SP-840	ADAPTER PKG.	5.50	45
C-771	TURNER—Flywheel	3.50	51
BU-775	GUIDE—Pull Arm	3.90	19
C-776	TANK—Wear Detector ..	21.00	63
C-784	WRENCH—Flange Hldg..	7.50	13
C-785	GAUGE— Comb. Vac. Pres.....	9.25	49
C-801	MICROMETER—C'shaft ..	24.75	60
C-804	TOOL—Tubing Flaring ..	11.40	63
C-806	LIGHT—Jr. Shop	8.95	85
C-812	CLEANER—Spark Plug ..	5.75	64
C-813	ABRASIVE—for C-812 ..	1.15	64
C-816	PACKER—Brg.	17.00	12
C-817	DRYER—5 Light	40.00	32
C-818	DRYER—5 Light	47.50	32
C-819	DRYER—13 Light	92.50	32
C-820	LAMP—Infra-Red	.75	32
C-821	LAMP—Infra-Red	.75	32
C-822	SANDER—Air Powered ..	79.50	88
C-823	HONE—Cyl.	49.50	60
C-824	SERVICE PKG.—C-585 ..	3.60	41
C-827	SERVICE PKG.—C-585 ..	3.95	41
C-828	TOOL KIT—Gen. Reg.	3.25	47
C-833	CHANGER—Tire Eastern. Wash., Ore., Cal., Nev., Utah & Ariz.—Western	150.00 165.00	88 88
C-837	TANK—Airless Bleeder .	50.00	33
C-838	LIGHT—Undercoating ...	23.95	85
C-841	ALIGNER and TOOL SET	60.50	57
C-848	TOTER—Mech. Tool	38.50	85
DD-849	DRIVER—Valve Guide ..	2.00	55
C-863	LIGHT—Eng. Timing. ...	20.50	48
C-866	DEPRESSOR—Pedal	5.95	34
DD-872	TOOL—Piston Ring	2.95	61
C-873	CUTTER—Tube	2.50	63
C-875	INSTALLER—Hinge Sprg..	9.15	31
C-879	Fndrol—Bumping Tool ..	29.50	30
C-898	WRENCH—½" Anchor ..	.60	38
C-899	WRENCH—⅝" Anchor ..	.60	38
BU-900	ATTACHMENTS— Push-Pull	11.15	29
BU-905	TOE—Short Push-Pull ...	1.40	29
BU-906	CAP—90 Degree Pushing	1.70	29
BU-907	TOOLS—Offset Spreading	1.50	29
BU-908	CAP— Bumper-Straightener .	1.90	29
BU-909	ATTACHMENT— Large Chain	3.65	29
BU-910	ATTACHMENT— Small Chain	1.90	29
BU-911	CHAIN—Six Feet Heavy Duty	6.45	29
BU-912	TOE—Long Push-Pull ...	2.15	29
BU-913	V NOTCH— Heavy Duty	1.50	29
BU-919	HOOK—Swivel Chain ...	3.95	29
DD-1014	STAND—Diff. Repair ...	74.75	15
DD-1017-1	BOOM—1 ton Extension	27.50	89
DD-1017-2	BOOM—2 ton Extension .	33.00	89
DD-1017-3	BOOM—3 ton Extension	44.00	89
DD-1045	CRANE—1 ton	336.75	89
DD-1046	CRANE—2 ton	451.00	89
DD-1047	CRANE—3 ton	645.25	89
DD-1051	PACKER—Bearing	57.75	12
DD-1150	TACHOMETER—Elec. ...	64.50	48
DD-1162	CLEANER—Thread 1" ...	6.50	10
DD-1163	CLEANER—Thread 4" ...	25.00	10
DD-1167	GAUGE—Brake Adj.	115.00	38
DD-1168	GAUGE—Brake Adj.	87.50	38
DD-1169	MICRO CHECK—Gauge .	11.55	38
C-3000	GUN—Flock Spray	20.00	32
C-3005	WRENCH—100 ft. lb. Sensory Type	28.85	51
C-3006	WRENCH—300 in. lb. Sensory Type	22.50	51
C-3012	REAMER—Cyl. Ridge ...	10.25	56
C-3032	CLEANER—Parts	14.75	81
C-3036	PLIERS—Hog Ring	2.70	32
C-3041	DRIVER AND BURNISHER— Dist. Bush.	12.50	47
C-3046	TOOL—Piston Ring	2.95	61
C-3047	TOOL—Conn. Rod Inst. .	9.90	57
C-3062	GRINDER—Brake Shoe ..	198.50	37
C-3063	MICROMETER— Brake Drum	20.35	37
C-3064	SLEEVES—Grinding	8.25	37
C-3078	TOOL—Impact	8.25	47
C-3079	JACK—Spring	22.00	65
C-3080	HONE—Brake Cyl.	7.15	34
C-3083	ADAPTER—Fluid Drive ..	12.50	69
C-3084	ADAPTER—Chrys. Trans..	12.50	69
C-3085	ADAPTER—Hydramatic .	12.50	69
C-3086	ADAPTER—Powerglide ..	17.50	69
C-3087	ADAPTER—Ultramatic ..	12.50	69
C-3088	ADAPTER—Fordomatic ..	12.50	69
C-3089	ADAPTER—Fit-All	22.50	69
C-3090	REAMER DRIVE	145.00	59
C-3091	REAMER DRIVE	220.00	59
C-3092	VISE—Piston	17.00	59
C-3093	VISE—Piston Pin	14.50	59

See Latest Price List For Current Prices and Complete Listing of All Miller Tools and Service Parts.
All prices subject to change without notice and net F.O.B. Detroit, Michigan, unless otherwise indicated. All tools will be invoiced at prices prevailing at time of shipment.

Miller Tool No.	TOOL NAME	Unit Price	Illust. on Catalog Page No.
C-3094	ADAPTER—Dynaflow . . .	12.50	69
C-3100	FEELER STOCK—.002" x ½" x 4 ft. . . .	1.00	61
C-3101	FEELER STOCK—.0015" x ½" x 3 ft. . . .	1.00	61
C-3105	DRIVER—Trans. Oil Seal.	4.50	70
KB-9000	KNU-BONDER—4 Unit Set	297.75	39
KB-9009	ANVIL—Knu-Bonder 9" .	75.00	39
KB-9010	ANVIL—Knu-Bonder 10".	75.00	39
KB-9011	ANVIL—Knu-Bonder 11".	75.00	39
KB-9012	ANVIL—Knu-Bonder 12".	75.00	39
MTB-80774	KEY MACHINE	60.25	30

SP Prefix Indicates Miller Standard Part Number

Following is a listing of tool parts, proven by experience to be those most often needed to keep tools in first-class operating condition. All other parts are also available and will be supplied on request. Identify by original tool number with description of part desired and year and model of vehicle it must fit. SP prefix identification numbers will be found on most current tools in place of original detail series. Order by SP number whenever possible — it will help us serve you more efficiently.

KF-3 BEARING PULLER

Illustrated on Page 16

KF-3-P	Press Assembly Only	$ 11.50
KF-3-1	Base (Sp-119)	5.05
KF-3-2	Puller Screw (SP-116-E)	1.84
KF-3-3	Differential Adapter Plug Small (SP-1100)	3.45
KF-3-4	5/8" Hex. Nut, each (SP-84)	.10
KF-3-5	5/8" Stud, each (SP-118)	1.15
KF-3-6	Top Crosspiece (SP-117)	3.45
KF-3-10 to 36	Bearing Puller Plates, each pair. Numbers 10 to 36 stamped on Puller Plates indicate size. Other number indicates pair number — be sure plates are used in pairs.	3.45
KF-3-200	Metal Case	4.50

KF-4 CAMSHAFT BEARING PULLER

Illustrated on Page 63

KF-4-4	Horseshoe Washer (SP-132)	$ .80
KF-4-5	Slotted Shaft (SP-133)	5.20
KF-4-9	Adapter	3.35
KF-4-10	Adapter	3.35
KF-4-11	Adapter	3.35

KF-13 FUEL PUMP CHECKING GAUGE

Illustrated on Page 50

SP-143	Pressure Gauge	$ 3.45
SP-155	Brass Tee	1.45
SP-2	Hose Connector	.30
SP-160	Brass inverted male Connector	.15
SP-157	Rubber Hose	.35

KF-14 UNIVERSAL JOINT FLANGE TOOL

Illustrated on Page 80

SP-166-A	Yoke Installing Sleeve	$ 1.45
SP-102	Nut	.10
SP-168	Pinion Shaft Adapter Screw	2.55

KF-15 AXLE SHAFT PULLER

Illustrated on Page 13

SP-340	Adapter Hook	$ 1.25
SP-341	Adapter size 3/4-16 and 1-3/16-16	.75
SP-342	Adapter size 7/8-14 and 1-14	.85

KF-27 VALVE GUIDE REMOVER AND INSTALLER

Illustrated on Page 54

KF-27-1	Main Puller Screw	$ 3.25
KF-27-2	Main Puller Nut	.80
KF-27-3	Angle Type Remover Head	2.10
KF-27-4	Guide Remover Nut	1.90
KF-27-5	Thrust Bearing (SP-287)	.60
KF-27-6	Guide Installing Nut	.80
KF-27-7	Guide Installing Sleeve	1.40
KF-27-8	Aligning Adapter for KF-27-7	1.40

KF-29 WATER PUMP IMPELLER PULLER

Illustrated on Page 43

*SP-1010	Impeller Adapters (set of 4) for 1951 cars	$ 7.00
SP-1037-A	Main Body	8.50
SP-1038	Impeller Adapters (set of 4) for 1947, '48, '49, and 1950 cars	7.00
SP-1039	Adapter Lock Ring	1.05
SP-1041	Main Puller Screw (short) for 1947, '48, '49, and 1950 cars	2.80
*SP-1048	Main Puller Screw (long) for 1951 cars	2.80

*These parts make KF-113 to adapt early KF-29 Pullers to fit 1951 Kaisers.

KF-31 ENGINE VIBRATION DAMPER PULLER

Illustrated on Page 62

SP-111	Crosspiece	$ 2.30
SP-333-B	Main Puller Screw	2.00
SP-371	Thrust Button	1.50
SP-372	Adapter Screw 5/16" x 18" x 2½" ea.	.10

KF-40 CARTER CARBURETOR SERVICE TOOL KIT

Illustrated on Page 49

T-109-22	Bending Tool	$ .30
T-109-29	Wire Gauge .020" - .030"	.78
T-109-32	Float and Unloader Gauge, 15.64"	.24
T-109-34	Float and Unloader Gauge, 9/64"	.24
T-109-41	Fast Idle and Unloader Bending Iron	.90
T-109-43	Rivet Extractor	1.20
T-109-44	Wire Gauge, .015" - .018"	.78
T-109-51	Grip Socket Handle	.72
T-109-53	Bar for Grip Handle	.36
T-109-56	Ball Retaining Ring Removing Tool	.72
T-109-57	Screw Driver Bit, 5/16" blade	.90
T-109-58	Screw Driver Bit, 1/4" blade	.90
T-109-59	Screw Driver Bit, 3/16" blade	.90
T-109-71	Thickness Gauge, .010"	.24
T-109-72	Thickness Gauge, .015"	.24
T-109-102	Metering Rod Gauge, 2.468"	.12
T-109-105	Adjusting Tool	.60
T-109-107	Float and Unloader Gauge, 5/16"	.24
T-109-117S	Universal Pump Stroke Gauge	3.90
T-109-158	Wire Gauge, .045" - .053"	.78
T-109-160	Float Level Gauge, 9.64"	.30
T-109-163	Metering Rod Gauge, 2.940"	.12
T-109-178	Nozzle Extractor	.54
T-109-197	Float Level Gauge	.18
SP-449	6" Machinist's Scale	.18
NPN	Fitted Metal Case	3.50

KF-52 VALVE TAPPET REAMER SET

Illustrated on Page 54

SP-489	Long Pilot Handle Driver	$ 2.90
SP-610	Short Pilot Handle Driver	2.75
SP-613	.002" Oversize Cutter	5.75
SP-614	.005" Oversize Cutter	5.75
SP-615	.008" Oversize Cutter	5.75
SP-698	Fitted Wooden Case	2.00

KF-58 VALVE SEAT RELIEF COUNTERBORING SET

Illustrated on Page 52

SP-655	Reseater Cutter 1 3/8" O.D.	$ 5.75
SP-656	Reseater Cutter 1 9/16" O.D.	5.75
SP-657	Pilot	2.00

MH-80 WET TYPE VALVE REFACER

Illustrated on Page 84

804	Diamond in Holder	$ 6.50
806	4½" Fine Grinding Wheel	3.60
807	4½" Coarse Grinding Wheel	3.60
810	COLLET ½" to ¾"	15.50
15292	Ford Valve Stem Grinding Fixture	27.85
15295	Ford Depth Gauge	31.50
15481	Spindle BELT for 60 cycle motor	1.15
15482	Spindle BELT (25 and 50 cycle Motor)	1.15
15483	Workhead BELT	1.15
	(Special Motors Prices Quoted on Application)	

KF-98 DIAL INDICATOR SET

Illustrated on Page 78

KF-98-196-F	Hole Indicating Attachment	$ 2.50
KF-98-196-K	Swivel Sleeve	1.25
KF-98-196-G	Attaching Clamp 5/16" Shaft	1.75
KF-98-196-B	Indicator with 3 points	12.25

W-99 PINION AND RING GEAR GAUGE SET

Illustrated on Page 17

W-100	Front and Rear Pinion Bearing Cup Remover and Installer	$ 7.70
W-100-1	Crosspiece	1.75
W-100-2	Main Puller Screw	2.45
W-100-3	Pinion Bearing Cup Installing Adapter	1.75
W-100-4	Pinion Rear Bearing Cup Removing Adapter	1.75
W-100-6	Pinion Front Bearing Cup Removing Adapter	1.75
W-101	Pinion and Ring Gear Setting Gauge Complete in Metal Case, Less W-100 and W-102	42.55
W-101-1	Dial Indicator Mounting Main Body	5.50
W-101-2	Dial Indicator Mounting Main Body Adapter	4.50
W-101-3-A	Pinion Center Aligning Fixture complete with #4 and #9 Centering Pins and Lock Screws	24.00
W-101-11	"A", "B", "C", and "D" Master Gauge Block	6.00
W-101-13	"E" Master Gauge Block	3.75
W-101-200	Fitted Metal Case	4.20
W-102	Dial Indicator complete with Long Contact Point, Attaching Clamp, Swivel and Adjusting Rod. (See C-430 for individual parts.)	17.50

KF-102 VALVE SEAT GRINDER

Illustrated on Page 52

KF-102-P-322	Electric Driver	$ 38.50
KF-102-P-223	Hex. Drive	2.00
KF-102-P-372	Stone Dresser with Diamond	28.50
KF-102-P-61	Pilot Wrench	2.50
KF-102-P-189	Stone Holder Cleaning Brush	.10
KF-102-P-84	Long Pilot	3.25
KF-102-P-84S	Short Pilot	3.25
KF-102-P-190	Stone Holder	6.00
KF-102-PS-190	Stone Holder	6.00
KF-102-P-235	Grinding Stone	2.00
KF-102-P-237	Grinding Stone	2.00
KF-102-P-460	Geared Angle Drive	23.75
KF-102-P-300B	Tool Chest 14" x 14" x 11"	21.50

KF-103 REAR MAIN BEARING OIL GUARD REMOVER AND INSTALLER

Illustrated on Page 62

SP-1057	Guide Bar	$ 1.00
SP-1060	Adapter	1.00
SP-1061	Semi-Circle Drive Plate	6.50
SP-1455	Adjustable Drive Buttons, ea.	1.00

KF-115 FLYWHEEL DOWEL PIN TOOL KIT

Illustrated on Page 78

KF-115-1	Dowel Puller Adapter	$ 2.75
KF-115-2	Bushing Aligning Block	3.75
KF-115-3	Aligning Pin	2.40
KF-115-4	Drill Bushing	3.75
KF-115-5	Oversize Dowel Reamer (.516")	4.50
KF-115-6	Reamer Bushing	3.75
KF-115-7	Oversize Dowel Driver	1.50
KF-115-9	Dowel Puller Main Screw	1.75
KF-115-10	Dowel Puller Weight	2.50
KF-115-11	Dowel Puller Handle	.75
KF-115-12	Dowel Puller Weight Stop	.60

KF-122 UPPER CONTROL ARM ASSEMBLY GAUGE

Illustrated on Page 11

1113-A	Spreader Jaw	$ 1.85
1118-A	Spreader Wedge	1.40

W-129 DIFFERENTIAL HOUSING SPREADER

Illustrated on Page 16

W-129-1	Spreader Screw	$ 3.75
W-129-2	Spreader Screw Nut	3.50
W-129-10	Back Connector Crosspiece	5.00
W-129-13	Left Arm	7.50
W-129-14	Right Arm complete with W-129-2 Nut	11.00

KF-137 VALVE TAPPET REAMER SET

Illustrated on Page 54

SP-489	Long Pilot Handle Driver	$ 2.90
SP-610	Short Pilot Handle Driver	2.75
SP-1266	.002" Oversize Cutter	5.75
SP-1267	.005" Oversize Cutter	5.75
SP-698	Fitted Wooden Case	2.00

KF-141 CARTER CARBURETOR SERVICE TOOL KIT

Illustrated on Page 49

T-109-31	Float and Unloader Gauge ¼"	$ .24
T-109-36	Float and Unloader Gauge ⅛"	.24
T-109-83	Float and Unloader Gauge ½"	.24
T-109-126	Float and Unloader Gauge 9/32"	.24
T-109-200	Wire Gauge (.010" and .012")	.78
T-109-212	Diaphragm Shaft Clamp	.30

C-232 STEERING WHEEL PULLER

Illustrated on Page 67

C-232-1	Straight LEG (SP-376)	$ 2.45
C-232-2	Bowed LEG (SP-377)	2.45
C-232-4	Leather Protector CUP (SP-378)	.85
C-232-6	Top CROSS-PIECE (SP-397)	3.55
C-232-7	Puller SCREW (SP-56-B)	2.45
C-232	Adapter BUTTONS each	.40
C-232-20	Set of 4 Adapter BUTTONS	1.75

MT-270 POLISHER AND BUFFER

Illustrated on Page 32

MT-270-2	Lambswool Buffer Pad	$ 1.75
MT-270-3	Buffer Pad Backing Plate (Includes attaching Nut and Hex. Jam Nut)	5.00

C-319 REAR WHEEL HUB PULLER

Illustrated on Page 13

C-319-1	Puller BODY (SP-1011)	$ 8.05
C-319-12	Puller SCREW (SP-198-A)	2.90

C-360 CLUTCH PLATE ARBOR

Illustrated on Page 40

C-360-1	Inner Expanding TUBE	$ 1.90
C-360-2	Main SCREW	1.20
C-360-3	Centering CONE	2.90
C-360-5	Split BUSHING	1.05
C-360-6	Small EXPANDER NUT	.85
C-360-7	Large EXPANDER NUT	.85
C-360-10	WING NUT (SP-187)	.10
C-360-11	Thumb SCREW (SP-62)	.10
C-360-13	Sliding Locking COLLAR	.70
C-360-14	Spacer SLEEVE	.70

C-362 BRAKE CYLINDER REFILLER

Illustrated on Page 33

C-362-9	Small ADAPTER, Each	$ .30
C-362-11	Large ADAPTER, Each	.30
C-362-12	Glass JAR with Gasket (SP-220)	.35
C-362-13	Sponge Rubber GASKET (SP-222)	.15

Parts for the Refiller Head cannot be supplied separately. If damaged it should be returned to the Miller Manufacturing Co. for repair.

DD-398 WEE GEE BOARD

Illustrated on Page 9

201	BASE and Approach Assembly	$ 35.00
202	Top RUNNER Assembly	25.00
224	Pivot PIN Bearing	1.25
225	Pivot BEARING	4.00
227	Centering SPRING	1.00
229	Roller RETAINER	10.00
230	ROLLER	.15
231	POINTER	.60

DD-428 CAMBER AND CASTER GAUGE

Illustrated on Page 9

416	V-LEG	$ 4.25
417	CROWFOOT	6.75
418	Assembly QUADRANT	21.75
419	Assembly Quadrant BODY	6.90
420	BODY—Quadrant	5.50
421	SCALE—Quadrant	1.25
422 (457)	ASSEMBLY V-LEG	4.85
423 (454)	ASSEMBLY CROWFOOT	6.95
425	STUD—Quadrant Body	.50
426	Assembly LEVELING BAR	5.25
427	Bar—LEVELING	4.95
430	ASSEMBLY POINTER	2.75
431	POINTER	2.75
433	Assembly Level HOLDER	2.00
434	HOLDER—LEVEL	2.50
435	SPIRIT LEVEL	1.00
444	Assembly Holding CHAIN	1.70

C-430 DIAL INDICATOR RODS, ADAPTERS, ETC.

Illustrated on Page 12

C-430-3	1/4" Eyelet ROD (SP-149)	$ .80
C-430-5	3/8" x 8" ROD (SP-405)	.80
C-430-A8	SWIVEL JOINT and 2 Rods	2.85
C-430-12	DIAL INDICATOR only (SP-54)	12.50
C-430-15	Knurled NUT (SP-96)	.40
C-430-16	Indicator Mounting SCREW (SP-95)	.25
C-430-23	CLAMP only (SP-472)	2.25
C-430-18	Clamp Extension ROD (SP-150-B)	.35
C-430-19	Lock NUT, Each (SP-89)	.05

C-452 UNIVERSAL JOINT FLANGE PULLER

Illustrated on Page 80

C-452-1	Puller PLATE	$ 2.55
C-452-2	Puller SCREW	1.85
C-452-3	Adapter PLUG, Each	.90

C-453 GENERATOR PULLEY PULLER

Illustrated on Page 47

C-453-A1	Hinged Puller BODY ASSEMBLY	$ 8.05
C-453-4	Puller SCREW and BUTTON (SP-72-A)	2.75
C-453-6	Retainer RING (SP-71)	1.05
C-453-7	HANDLE	.20

C-552 UNIVERSAL JOINT PIN JIG

Illustrated on Page 80

C-552-1	BODY (SP-674-A)	$ 4.70
C-552-2	PIN (SP-676)	1.55
C-553	Spacer Bushing	1.60

C-562 BRAKE LINING RIVETING MACHINE

Illustrated on Page 34

C-562-74	Rivet HOLDER 5/16"	$ 1.20
C-562-75	Rivet HOLDER 3/8"	1.20
C-562-141	Knockout ANVIL	1.80
C-562-375	Grinding SLEEVES	.35
C-562-377	Rubber Grinding WHEEL	3.00
C-562-102	Roll CLINCHER 9/64"	2.40
C-562-103	Roll CLINCHER 3/16"	2.40
C-562-93	Combination 5/32" DRILL and 13/32" COUNTERSINK CARBOLOY	7.20
C-562-92	Combination 5/32" DRILL and 11/32" COUNTERSINK CARBOLOY	7.20
C-562-94	Combination 13/64" DRILL and 13/32" COUNTERSINK CARBOLOY	7.20
C-562-1200	V-Drive BELT	1.50

C-585 CLUTCH FIXTURES

Illustrated on Page 41

C-585-1A	BASE only	$ 15.25
C-585-1B	BASE only for C-585-B Unit	23.00
C-585-2	Main SCREW	1.55
C-585-3	Compression NUT (SP-84)	.15
C-585-4	Cover CLAMP only	.35
C-585-A6	CLAMP BOLT, NUT and WASHER ASSEMBLY	.15
C-585-8	Hardened Compression Nut Thrust WASHER	.20
C-585-9	Self-Aligning WASHER	1.30
C-585-12	Compression SPIDER	2.55
C-585-15 to 21	Thickness SPACERS, Each	1.10
C-585-32	Finger Support Blocks, Per Set of 3	.70
C-585-33	Cover Support Plate	1.00
C-585-34	Feeler Blade Retainer Staple, Set of 3	.20
C-585-36	Compression Plate (Supersedes C-585-10)	2.75
C-585-37	Feeler Blades, Per Set of 3 (Supersedes C-585-11)	3.95
C-585-42	THICKNESS SPACER	1.10
C-585-43	THICKNESS SPACER	1.10

Also See Service Pkgs. C-827 and C-824

C-684 "GARAGE MAN" SHOP LIGHT

Illustrated on Page 85

C-684-1	SHADE only	$ 3.30
C-684-203	SWIVEL	1.76
C-684-4	Set of 3 CASTERS	1.10
C-684-5	Height Locking COLLAR	.33
C-684-6	Neoprene SOCKET	2.59

C-684-7	BASE Less Casters	8.80
C-684-10	Cast ARM	1.43
C-684-894	SWIVEL (nearest socket)	1.88

C-690 PISTON FITTING GAUGE AND SCALE

Illustrated on Page 61

C-690-1	Heavy Duty 20 lb. Brass SCALE (SP-127)	$ 6.00
C-690-A4	Feeler GAUGE Clamp Assembly	.85
C-690-6	.0015" Feeler BLADE (SP-694)	.40
C-690-7	.002" Feeler BLADE (SP-699)	.40
C-690-8	.003" Feeler BLADE (SP-695)	.40

C-707 DISTRIBUTOR POINT GAP DIAL INDICATING TOOL

Illustrated on Page 48

C-707-1	Tool Clamp Body	$ 2.90
C-707-2	Dial Adjusting Eyebolt	3.10
C-707-3	Dial Indicator Adjusting Screw with Nut	2.30
C-707-4	Dial Indicator (SP-54)	12.50
C-707-5	Offset Contact Pointer for Dial	.85

C-770 ARMATURE TURNING AND UNDERCUTTING TOOL

Illustrated on Page 45

C-770-1	Cutter Tool BITS Each	$ 1.00
C-770-2	Undercutting SAWS Each	.10
SP-840	1/4" and 5/16" Collet Set	5.50

C-776 ENGINE BEARING WEAR DETECTOR TANK

Illustrated on Page 63

C-776-970	Assembly Tank	$ 7.50
C-776-928	Long Service Hose	7.00
C-776-929	Short Service Hose	3.65
C-776-930	Shut-Off Valve	1.65
C-776-931	Pressure Gauge	3.40
C-776-932	Safety Valve	5.00
C-776-933	Air Inlet Valve	1.45
C-776-934	Fill Plug	2.35
C-776-935	Fill Plug Gasket	.25
C-776-948	1/8" Hose Coupling Adapter	1.10
C-776-949	1/4" to 1/8" Pipe Thread Adapter	.75
C-776-971	3/8" to 1/4" Pipe Thread Adapter	.60

C-823 CYLINDER HONE

Illustrated on Page 60

C-823-619	Set of 2 Std. Stones and 2 Buff. Guides	$ 4.40
C-823-620	Set of 2 Burnishing Stones and 2 Buffing Guides	4.40
C-823-37	Retainer Springs, each	.28

C-828 GENERATOR REGULATOR TOOL KIT

Illustrated on Page 47

C-828-1	Spring Tension Adjuster	$ 1.00
C-828-2	Retainer Case	.50
C-828-7	Air Gap Gauge .048" and .052"	.75
C-828-9	Air Gap Gauge .031" and .034"	1.50

C-837 AIRLESS BRAKE BLEEDER

Illustrated on Page 33

100959	Pressure Gauge	$ 3.65
100965	Bleeder Tube	1.40
155871	Piston	5.10
157527	6' Hose Assembly	4.10
158528	12" Hose Assembly	1.35
201021	Foot Valve Assembly	5.00
202891	1 1/4" x 18 Thread Adapter	1.85
202892	3/4" x 18 Thread Adapter	1.85
202893	1 5/8" x 18 Thread Adapter	1.85
202894	90° Angle Adapter	1.65
202895	Dispensing Nozzle	4.40
202910	Hose and Valve Assembly	8.00

C-841 CONNECTING ROD ALIGNER

Illustrated on Page 57

C-710-2	Extra Oversize CARRIERS 2 5/8" to 3 1/8"	$ 7.15

DD-1014 DIFF. AND TRANS. REBUILDING STAND

Illustrated on Page 15

DD-1014-1	Base	$ 27.60
DD-1014-2	Upright Tubes, Each	11.50
DD-1014-3	Carrier Support Bracket, Each	6.90
DD-1014-4	Carrier Support Bracket Plug, Each	4.30
DD-1014-5	Carrier Support Bracket Lock Handle	.80

C-3012 CYLINDER RIDGE REAMER

Illustrated on Page 56

C-3012-1	Extra Carbide Cutter	$ 4.00

C-3041 DISTRIBUTOR BUSHING BURNISHER

Illustrated on Page 47

SP-1171	Driver Handle and Adapter	$ 6.75
SP-1172	Burnisher only	6.00

C-3047 PISTON AND ROD INSTALLER

Illustrated on Page 57

SP-1226	Conn. Rod Thread Protector	$ 1.25

C-3078 IMPACT TOOL

Illustrated on Page 47

C-3078-6M	Impakdriver	$ 5.20
C-3078-6225D	1/4" Plain Screwdriver Bit	1.45
C-3078-6375D	3/8" Plain Screwdriver Bit	1.45
C-3078-620P	#2 Phillips Screwdriver Bit	1.45
C-3078-640P	#4 Phillips Screwdriver Bit	1.45
C-3078-643S	7/16" Hex Socket	1.35
C-3078-650S	1/2" Hex Socket	1.35
C-3078-656S	9/16" Hex Socket	1.35
C-3078-665	Special Tray	.45

C-3080 BRAKE CYLINDER HONE

Illustrated on Page 34

C-3080-1741	Replacement Stones (2 sets; 3 stones per set)	3.30
C-3080-1734	Set of 3 Springs	1.10

RETURN SHIPMENTS

Should it become necessary to return any Miller tool for repairs or credit consideration, it should be returned transportation prepaid to Miller Manufacturing Co., 5919 Tireman Ave., Detroit 4, Michigan, U.S.A. Tool should be adequately tagged for identification purposes and a letter of explanation mailed the same day tool is returned. Our written permission to return tools for credit must be obtained before returning tools. A 10 per cent restocking charge plus reconditioning expense will be deducted from credit memorandum.

ALL MILLER TOOLS ARE GUARANTEED

You can purchase any Miller tool with complete confidence. You can be sure that it will safely perform the job for which it was designed and sold. Should any Miller tool, within one year of normal use not meet these requirements or should it prove to be of defective workmanship or material—return it postpaid along with your comments to Miller Manufacturing Co., 5919 Tireman Avenue, Detroit 4, Michigan, U.S.A. A new tool or your old one satisfactorily repaired will be gladly shipped you immediately, no charge F.O.B. Detroit.

ALL MILLER PRICES ARE SUBJECT TO CHANGE

Because of prevailing world conditions, it is necessary that all Miller prices be published and quoted subject to change without notice. New up-to-date lists are published and issued as necessary and practical. Copies are available free on request. All Miller prices are, therefore, subject to change without notice and F.O.B. Detroit, Michigan, unless specifically noted otherwise. All tools will be invoiced according to prices prevailing at time of shipment.

SPECIAL SERVICE TOOL IDEAS INVITED

All Miller tools are developed around practical, portable tool designs. Many of the original design ideas have been suggested or submitted by working mechanics. If you have such a tool idea and believe it will save time and money for other mechanics, send it in—it may earn you some worthwhile extra income. All ideas so submitted will be treated confidentially and either returned to the sender if not used, or a mutually satisfactory payment arranged, for their exclusive transmittal to Miller Manufacturing Co.

MILLER SPECIAL SERVICE TOOL ORDER

Mail Original Direct to: Miller Manufacturing Co., 5919 Tireman Ave., Detroit 4, Michigan. Retain Copy for Your Files.

Date _____ 19____ Order No. _____

Charge to _____ Ship to _____

Address _____ Address _____

City _____ Zone ____ State _____ City _____ Zone ____ State _____

Ship Via _____ Representative _____ District _____ Region _____

Unless specified, we will ship Parcel Post, Express or Freight as our Judgment Indicates.

QUANTITY	TOOL NO.	NAME OF TOOL (USE CATALOG DESCRIPTION)	PRICE	TOTAL
		TOTAL		

All prices Net F.O.B. Detroit and subject to change without notice. All tools will be invoiced according to prices prevailing at time of shipment.

Signed _____
Dealer

PLEASE DO NOT WRITE IN SPACES BELOW

Ledg. No.	Class	Terms	Miller Order No.	Reg.	Dist.	R/V	Cont.

By _____
Authorized Signature

All tools will be invoiced according to prices prevailing at time of shipment. All prices are net F.O.B. Detroit, unless otherwise noted and subject to change without notice.

MILLER MANUFACTURING CO.

5919 TIREMAN AVE.

DETROIT 4, MICHIGAN, U. S. A.